FEB 5 1884

THE AMERICAN FARMER

ESTABLISHED 1819

NINTH SERIES. BALTIMORE, MD., FEBRUARY 1, 1884. VOL. III.—NO. 3.

Lime.

BY B. PURYEAR, LL.D.

[Professor of Chemistry in Richmond College.]

Lime and the compounds of lime have in all ages largely attracted the attention of the tillers of the soil, and opinion as to their value and action has been various and discordant. Lime in the form of its carbonate, a compound of carbonic acid and lime, constitutes about one seventh of the rocky crust of the globe. If it be really valuable, therefore, its value and its great abundance make it a matter of the highest interest to the farmer.

It will be our object in this article to show the functions of lime in vegetable growth, and to explain why in some cases it satisfies, and in others disappoints, the hopes of the husbandman.

(I.) Lime is a constituent of the ash of all plants. The amount of lime in the ash of plants varies with the plant, being small in the ash of the cereals, but quite large in the ash of the grasses and of the wood of trees. The amount in the ash of hay is 23 per cent.; in tobacco 37 per cent. Now, the substances that constitute the ash of plants being solid, come, and come of necessity, from the soil. They do not exist, and cannot exist, in the atmosphere. The same substances, but in very different proportions, make up the ash of all plants. It may be well to mention them. They are potash, soda, lime, magnesia, oxide of iron, silica, chlorine, sulphuric and phosphoric acids. In some plants, then, notably tobacco, the amount of lime in their ash is more than a third of the entire ash, made up, as it is, of nine constituents. Lime then, being a part of the ash of all plants, and of the ash of many a very large part, is an essential constituent of all fertile soils.

(II.) Lime possesses caustic or disorganizing properties. If we wrap up a lump of lime in a newspaper, or in a piece of cloth, we will find in a short time on unwrapping it, that the cloth or paper will not hold together; it falls into pieces; it is rotten, as we say. So in tanning, the hair is easily rubbed from hides that have been duly steeped in a solution of lime.

In agriculture we make use of this property of lime in hastening the decomposition of vegetable matter. When a heavy sod is turned under, or a heavy crop of peas, the application of lime is always indicated. It may perform both the functions we have attributed to it, that is, it may both act as plant food itself, and also rot the vegetable matter, which is valuable only as it rots. When both these objects are accomplished, the good effects of the application of lime will be strikingly conspicuous. The farmer will be exultant in the result and enthusiastic in his praise. The final issue, however, may abate the ardor of his zeal; perhaps may turn his praise into malediction. Let us see. Encouraged by the good results, he continues the application. The natural deficiency of the soil in lime is satisfied—is more than satisfied. Hence the lime will cease to supply a want, and one of the good effects produced by the first application will therefore vanish. But more. Lime has done so well that he thinks its continued application all that is necessary to his continued success. Perhaps he cultivates his land every year, removes the crops closely, allows no rest or recuperation in a crop of grass. Dazed by success, he now falls into a damaging conclusion. Again, let us see. There is no thick sod, no matted vines, to be turned under, as he plows his land for wheat or corn. Still he puts on the lime, but the soil now has lime enough, and there is but little vegetable matter to be decomposed by the action of the lime. The two prime conditions, under which the lime acted so well, are now both absent; of course the good results do not appear, and the man is mad—mad with the lime, instead of being mad with himself for not having read the instructive pages of THE AMERICAN FARMER.

Indeed there are cases, as might be inferred from the foregoing remarks, when the application of lime is positively injurious. When the soil has lime enough, and there is very little vegetable matter to be decomposed, the application of lime is contra-indicated. Lime, in such a case, would cause the too rapid decomposition of the small amount of organic matter in the soil, using it up before the crop is fully matured.

Again, we may say in this connection, that the mixing of lime with the natural guanos or the excrements of our domestic animals is always injurious. If we take a piece of muriate of ammonia, a compound of muriatic acid and ammonia, and triturate it in a mortar with a little caustic lime, the pungent odor at once perceived indicates the escape of that most valuable gas, ammonia. What has happened? The lime has combined with the acid, and ammonia is set free as a gas, which being but little more than half as heavy as the air rises and escapes. Now, the excrements of animals contain salts of ammonia, and lime mixed with them sets free in the same way the gas, ammonia, which gives to these fertilizers their chief value.

(III.) Lime sometimes performs another important function. It corrects the acidity of soils, just as we use it to correct the acidity of the stomach.

In the language of chemistry, acids and alkalis are antipodal in their effects and relations. When an acid combines with a base, a new compound is formed which has, as a general statement, none of the properties of either of its constituents. When lime—an alkali—combines with an acid, a neutral salt is formed, having the properties neither of the acid nor of lime. Now soils are frequently sour from the presence of vegetable acids. Soils permanently wet are always sour, because the water excludes the atmosphere and so prevents the complete decomposition of the vegetable matter. Vegetable acids, under such circumstances, are formed out of the elements of the organic matter, which undergoes only partial decomposition in consequence of the exclusion by water of atmospheric oxygen. These acids are injurious to the crops we generally cultivate.

The only permanent remedy is thorough drainage, by which we get rid of the excess of water, and as the soil shrinks and cracks, air finds access, the organic matter is completely decomposed, and so these acids are no longer formed. When a marsh is drained, therefore, the atmosphere itself would correct the acidity of the soil, but not at once. We wish to get the benefit the first year of the expense incurred in draining. The application of lime will surely accomplish this result, combining with and neutralizing the the free acids as it sinks through the soil, and, at the same time, decomposing the large amount of vegetable matter which has been so long accumulating in such localities.

Agricultural Matters Abroad.

[From our Paris Correspondent.]

FATTENING PIGS.—Professor Sanson has been experimenting on the relative value of carbonaceous substances for the fattening of pigs. He selected a Windsor pig, aged ten weeks, and weighing 24 lbs., and a Yorkshire, aged eight weeks, weight 24 lbs. The first was fed from 10th December, 1880, to 17th April, 1881, exclusively on barley amounting to 202 lbs., when it weighed at the end of the four months, 52 lbs., thus representing a net augmentation of 28 lbs. The Yorkshire was fed on barley, potato starch and sugar, from the 17th November, 1881, to 25th February, 1882, in the total proportions of 75 lbs. of barley, 60 of starch and 7 of sugar. At the end of the experiment, it weighed 54 lbs., or an augmentation of 30 lbs. In 128 days the Windsor gained 28 lbs.; in 100 days the Yorkshire, had put up 30 lbs. of flesh, or, respectively an augmentation at the rate of 3½ and 4¾ ounces per day. The professor concludes, that for young pigs, a highly carbonaceous food is not that which is most conducive to their development, or even most favorable to the production of fat, though the latter he maintains he formed from the hydrates of carbon, and not from the protein compounds as German scientists maintain. The practical inferences is, that the pig being an omniferous animal, it stands in need, when young, of an alimentation that will develop the body, rather than produce flesh, and that during the period of growth, the food ought to contain a large proportion of animal matter, as dairy and kitchen refuse, and the cooked *debris* from slaughter-houses. These adjuncts will supply the protein compounds.

WASTE FROM STARCH FACTORIES.—In districts where starch is manufactured from potatoes, the residue or pulp, has hitherto been rejected. In process of decomposition, the mass emits an odor as disagreeable as olives undergoing fermentation. Those who convert the pulp into manure, make it into a compost, adding to the mass, salt or gypsum. Of late, farmers find it more profitable to utilize the potato, like beet pulp, and make it enter into the rations of stock, in the proportion of one-fourth, with crushed grains, bran, roots, chaffed fodder, etc., adding a little salt.

VACCINATION AGAINST MEASLES IN PIGS.—M. Pasteur has summarized his operations in this direction. He pays a graceful tribute to his pupil, Thuillier, who recently lost his life in Egypt from cholera, where he went to study the nature of the virus of that disease. In the spring of 1882, Thuillier visited the south of France to study an alarming outbreak of measles among pigs. On examining the blood of some of the diseased animals, he noticed a new animalcule or microbe which might be the cause of the disease. Dr. Klein, of London, had pointed out that a microbe was the cause of measles, but the animalcule he designated was not the true one. Professor Detmers, of Chicago, was the first to indicate the exact microbe, and which Pasteur's experiments have corroborated.

With the morbid virus or its microbes, of a measly pig, Pasteur produced the animalcules artificially in a kind of soup made from veal. With the virus thus produced, pigs were vaccinated not only in the South, but in every other part of France. Where the disease was endemic, the inoculated hogs escaped, while those not treated, succumbed. The efficacy of the inoculation does not endure beyond a year, but that period of immunity generally suffices for the farmer. A microbe is virulent for an animal, in proportion to its power of rapid multiplication, like every other parasite, which feeding on the blood exhausts it of its oxygen. It is this rapidity of generation which constitutes the morbid nature of the microbe. While the superior scale of creation of animals requires thousands, aye millions of years for a new generation to be accomplished, in the case of the parasite microbe, immense and successive generations can be developed within twenty-four hours.

In the region of Vaucluse, where pig-measles appears to have its head quarters, it was impossible to rear rabbits and pigeons. Pasteur discovered they too contracted the contagion. On inoculating a pigeon with the morbid virus of an infected pig, the bird died within eight days, but if the virus was taken from that pigeon, and another pigeon inoculated with it, the latter was less severely attacked, and so on in proportion. The microbe became as it were minimised in its virulence or acclimatised. In the case of the rabbit, the virus taken direct from the pig ever proved mortal, but when selected from rabbits successively inoculated from each other, the virus not only proved harmless, but, like the case of the pigeons, as in identical circumstances with the artificial virus employed against *charbon* in black cattle and sheep, was an effective preventive against virus extracted from diseased pigs.

AMERICAN PORK IN FRANCE.—The French Legislature is acting inconsistently and annoyingly in respect to the admission of American pork into the country, on the plea that it is affected with trichine. The deputies voted the admission, but the Senators have thrown out the bill. However, public opinion is getting alarmed at the United

States preparing to apply the Reprisals Act The case of trichinosis discovered in France, was that from a native pig. The American pork was a God-send for the rural, as well as the urban populations; it was their "fowl in the weekly pot," and savored the palatable dish of vegetables.

Success in Farming Without Capital.

Messrs. Editors American Farmer:

A subscriber acknowledges satisfaction; believes the evidence before his eyes; it shows industry, effort, and he hopes and wishes you success. Yet every now and then are presented cases of successful farming on poor land and without capital, and he wonders how it can be a large crop is made without apparent adequate cause; or a poor farm is taken and improved, paid for in a few years; no capital to start with, economy and industry admitted, yet the *modus operandi* is not shown. Let us hear and see how it is done, and let it become the rule and not the exception.

We have had long experience in farming; are acquainted with a large scope of country and have no knowledge personally of such success. We see failures everywhere and hear of them frequently; we believe in economy, industry and management, aided by capital; we cannot see, and have not seen, success without all these united. We doubt the propriety of holding up to view cases of this character as calculated to mislead and subject the unwary to grave disappointment and weariness for life.

In all cases of great success let the whole procedure be exposed. We wish it were or could be so; we know it is not so, and cannot be so. How many fail with ample means. The management is wanting. How many fail with means, economy and industry lacking.

It is not all to raise good crops, feed fat cattle, and it is essential to success to keep plenty of cattle, and unless the crops are disposed of properly, and the cattle bought and sold as well as fed properly, loss instead of profit ensues.

Tell us then, hereafter, in cases of great success of the whole *modus operandi* and do not keep back half the price. Let us feel the animal. Let us see the amount received. Know how the land was fructified. How to commence on poor land, without money, without credit, without tools, without cattle. Did you not see what happened to the foreign Jews, who were placed by ignorant philanthrophists on poor land in Maryland and Virginia? Does not your assistant editor attempt to show how successful men have been without capital—colored men especially—here the reverse is universal. Again, renters, who engage to give half on their land, uniformly fail unless largely supplied with fertilizers. Rich land can give half and will gradually work down, and the tenant either moves or is sold out. Tenants are constantly moving. They, too, lack enterprise and capital, and a rolling stone gathers no moss. It yet remains to be discovered, that a renter, with a fair lease and sufficient capital, can make more money than the owner on the same land without capital.

What next? Poor land is worth nothing without capital to enrich and to stock it. So then add economy, industry and management, and success follows, and you can add your motto "*O fortunatos nimium sua si bona norint agricolas.*"

A.

[We have heretofore, from time to time, given narrations of the processes by which poor lands have been brought to fertility. Varying conditions necessitate changes in methods; and success, after all, depends most upon the qualities of the man. As our correspondent indicates, the task of making a living off of a poor farm, and at the same time increasing its productiveness, is a difficult one, and all the more difficult when capital is lacking. Yet it has been done, and is still being done, and the citing occasionally of such examples has a good effect, as we trust and believe, even when the details are not given in every case. EDS. A. F.]

The Montgomery County Farmers' Convention.

We add to the report in our last issue of the proceedings of this meeting the following abstracts of the several clubs of the county:

THE SANDY SPRING CLUB.

Most of the report of the Senior Club, was devoted to pleasant reminiscences, the organization having completed its fortieth year. The reporter continues:

The proceedings of the year just past show the subjects that have occupied the minds and hands (chiefly the former) of the men constituting the "Farmers Club" which I now briefly condense.

Oak shingles are preferred to chestnut. To the question "if you furnish your own timber what is the best fence for a farm?" The answer, was "Worm, 3; "Trunnel," 3; "Post and Rail" 5.

Crushed Corn is liked for feed. The crops raised this year by our club (which always means with the assistance of our children) appear to have exceeded any previous year. If the work is not done exactly by the same persons who labored forty years ago, it is done mainly in the same soil, and that is the important feature as showing the progress of agriculture in Sandy Spring.

The total of wheat was 9573 bushels on 392 acres, average per acre 24½ bushels; Corn 2710 barrels, on 304 acres, average per acre, 9 barrels.

THE ENTERPRISE CLUB.

On the 30th December, 1865, Frederick Stabler, A. M. Stabler and Samuel Hopkins met at the residence of Benjamin H. Miller to discuss the possibility of establishing a farmers' club, composed of the young men of Sandy Spring and vicinity. After full consideration of the question it was decided to meet at the residence of Wm. S. Bond on January 13th, 1866, and at that time and place the first regular meeting of the Enterprise Club was held, and during the 18 years since, our meetings have been held, regularly and with unabated interest, and we believe with much benefit to the individual members. In the 18 years we have taken in two additional members.

Our members have always been progressive, and any one who can look back at their dwellings and outbuildings in 1866 and will compare them with those occupied today will be struck with the great improvements accomplished. To take one single item as an illustration, in 1866, many procured water for house and barn, by the old fashioned windlass, the more fortunate with a good old fashioned pump; now seven of our members have both house and barn furnished with an unfailing supply of water by wind mill or hydraulic ram and many more have tanks, filled with rain water from the roof and supplied to various parts of the house by natural flow; and the wonder is, how did we ever get on without them.

In the same time the McCormick reaper has given place to the automatic binder in the wheat field, and the clumsy old fashioned mower has been succeeded by the many light and handy clippers of the present day, the Woodstock and Minor and Horton cast iron plows have succumbed to the Wiard, Syracuse and other steel plows, which are to the farmer as the thoroughbred horse to the common plug. Indeed look where you will, and improvement is so evident, that he who rushes through the world, as all Americans are said to do, cannot fail to note it.

In looking over the minutes of the past year, we make the following notes that may be of general interest:

January 1st Very handsome thoroughbred Berkshire hogs noticed. Our host reported that his cattle did not do as well on his meadow as formerly and he knew of no reason, except the superabundance of hog thistle. Members prefer No. 1 Heart Cypress shingles, to any other roof.

February 17th. A wind mill to furnish a water supply an improvement since our last meeting. A hog pen with platform at each end and manure pit in middle, wide enough to drive through recommended. Advised to shoot English sparrows.

March 17th. General complaints of sows losing pigs. Half Barbarian and half Percheron colts, demonstrated how blood will tell.

April 21st. A new farm for our examination has been annexed since our last visit. A visit to carp in ice pond added interest to our walk. Members unanimously opposed to putting silo in mow of barn. A fodder and hay cap thought to be a good investment.

May 19th. $200 offered for a two year old colt of our host's, which was declined. He was advised by eleven members to breed said colt the present season. The best way to raise watermelons is to grow something else, and *buy* melons. Cost of four wire barbed fence, with sawed posts, 4 cents per running foot.

June 16th. 300 acres cleared within 10 years and *closer everywhere*, cattle up to their eyes in it.

July 14th. A shower, as we started in our walk, made the 9th consecutive day upon which rain has fallen. An experiment with potato fertilizer showed largely in favor of Bond's manufacture. It was thought that a 25 acre crop of wheat would justify the purchase of a binder. Ice keeping uncommonly well.

August 18th. Saw no peach trees this year where there were hundreds formerly. The old question, of wheat turning to cheat, raised by reading a letter from Kansas, claiming that entire fields had changed in that State the present season. R. M. Stabler appointed to investigate further.

September 15th. A very large new ice pond since our last visit. In what was once an apparently hopeless marsh we found a good corn crop growing. Most complete hog house yet seen, with every modern convenience, front and back doors, sun shades, retiring rooms, etc. It was thought that lime applied in the spring had a tendency to keep corn green. It will pay to sow orchard grass at $2 per bushel on good land. Five pecks of Fultz wheat thought to be an abundance for drilling. Two-thirds of our members prefer dissolved South Carolina rock, to bone at double the price.

October 20th. Several large ricks of hay, roofed with boards, were noticed, a plan which our host tried last year, with satisfactory results.

November 10th. A hydraulic ram to force water from a spring six hundred yards away, to supply the house and barn at Falling Green, is the latest improvement. Barn full of wheat yet unthreshed: "none but the wealthy can act thusly," $2.25 per barrel thought to be a good price for corn, as it runs, in the field this season. Five of our members drawn to serve as jurors at November term of Circuit Court; proof positive that our Judges appreciate intelligence and known where to look for it.

December 8th. Stock at barn supplied with water by overflow from tank at house, which is filled by hydraulic ram. The members present equally divided upon the question of a new Court House at Rockville at cost of $30,000 to 40,000.

Altogether the year has been a fairly prosperous one; crops have been good, though prices of most farm products have been, and still continue, low. While our members generally have no special cause to complain of the results of the past year, they have not been entirely exempt from the trials and tribulations of life. One of our most active members lost his house and most of his furniture by fire, near the close of the year; and another had the misfortune of being defeated for the House of Delegates on the 6th of November. They both have the hearty sympathy of their fellow members.

Crop Report for 16 Members of Enterprise Club, 1883.

	Acres.	Bus.	Aver.	High't av.
Wheat	536	14,480	26	31¼
Corn	432	3,951 bbls	9 1-7	13 bbls
Oats	26	725 bus	28	35 bus
Rye	27	278 bus	10¼	14 bus
Potatoes	163	16,600 bus	102¼	155¼ bus
Hay	567	844 tons	1.49	2 tons

Butter made, 10,880 pounds; greatest amount of butter by one member 3981 pounds. Cream sold, 5000 gallons; greatest amount sold by a single member 1800 gallons. Hogs killed, 272; weight 54,504 pounds, average 200 pounds. Sheep kept, 149; wool sheared 488 pounds. Horses kept, 92; cattle, 267; 3 yoke oxen; 130 milk cows. One member sold calves for $185.99; 60 barrels apples; hogs and pigs for $1,050; peaches for $156; one cow for $100; threshed 12 acres of clover seed and made 15 bushels.

THE MONTGOMERY CLUB.

The meetings of the club for the past year have, as a rule, been full and interesting. At many of them quite a large proportion of those present were not members. The questions discussed have been live ones, well calculated to keep up an interest in our calling. Among other matters that have claimed our attention in the past twelve months I will mention one or two of themore important.

One of the members was appointed to write an essay on the subject. "Is it Possible to Construct a Narrow Gauge Railroad from Ashton to Laurel?" The essayist taking a favorable view of the matter and a number of the members concurring with him. The club deemed it advisable to appoint a committee of three to take the matter into consideration and report at a future meeting. This committee after conferring on the subject deemed it advisable to take no active steps in the matter at present. A committee was also appointed from the same body to enquire into the feasibility of establishing a Live Stock Insurance Company. This committee decided that such a company would be of great benefit to the farmers of the neighborhood and called a meeting of the clubs at this place for the purpose of organizing, but although nothing has yet resulted, the committee think that the company will eventually be started.

Besides the essay alluded to, we have had a number of others well worthy of mention, among them one entitled. "The Secret of Success in Farming," and which was published by one of our leading agricultural papers, THE AMERICAN FARMER.

The following are some of the questions discussed and conclusions arrived at: "The English sparrow does not do us any serious injury;" "A member was advised to put up a barbed wire fence on the public road, even though he had plenty of chestnut rails;" "It is thought pumpkins do not pay;" "The best time to sow orchard grass is in the spring;" "It will pay two or three farmers to unite in purchasing a manure spreader;" "Liming and frequent plowing will eradicate sheep sorrel;" "The club decided that it is not policy to insist on fifty-six pounds to the bushel for potatoes in Washington, even though it is the law of District of Columbia;" "It will pay a farmer having much clover hay to cure to own a tedder;" "Chestnut, oak, and locust posts are valued at 8, 10, and 20 cents respectively;" "The custom which has been much in vogue of sowing rye on corn stubble for early pasture to be followed by corn or potatoes is growing in disfavor;" "The Western wagon is becoming very popular."

Crop Report for 14 *Members of Montgomery Club*, 1883.

	Acres.	Bus.	Aver.	High't. av.
Wheat	490½	13,160	22½	29½
Corn	336	3,199bbls	7½bbls	9.9bbls
Oats	37½	958bus	25.6bus	34bus
Rye	14	220 "	15.7 "	23 "
Potatoes	100	12,820 "	114 "	150 "
Hay	386	674t'ns	1¾t'ns	2tons

Butter made 14,907 pounds; cream sold 6,581 gallons. Hogs killed 252; weight of pork 48,953 pounds. Sheep kept 256; amount of wool 1189 pounds. Horses kept 67; cattle 290; yoke of oxen 10; number of milk cows 127; 1100 bushels peaches brought $733.34; clover seed 33½ bushels; gallons of milk sold 7281; 23 cattle sold for $1,040.

Composition of Manure.

The value of manure, says a writer in the Philadelphia *Record*, depends not only upon the character of the feed allowed, but also upon the condition of the animal, the breed and the age. The principal substances of value in manure are nitrogen, phosphoric acid and potash, the former substance being the most costly. In the artificial fertilizers, nitrogen exists in the shape of sulphate of ammonia, nitrate of soda, or as Peruvian guano, while ground dried blood, leather and other substances containing it are sometimes used. Potash is usually supplied in the form of the sulphate (kainit), or muriate, its quality depending upon the grade of the salt used for the purpose, while the phosphoric acid (usually combined with lime) is derived from bones and sometimes from guano deposits and marine formations. The Carolina phosphate beds have been largely instrumental in cheapening this article, while that from bones is usually associated with proportions of nitrogen.

Barnyard manure and artificial fertilizers differ only in form. The active ingredients of barnyard manure are the same as those in fertilizers, excepting that the manure contains small proportions of magnesia, soda, and a few other substances not always present in fertilizers, though easily added to them if necessary. Manure contains, however, a large quantity of carbon, which is considered by some a valuable fertilizer, but others contend that as plants appropriate carbon from the atmosphere through the agency of the leaves, such matter only adds to the bulk of the manure without improving the quality. When food is fed to animals it undergoes a chemical process in the body, which extracts the nutritive portions for sustenance, according to the digestive capacity of the animal, the residuum being voided as being no longer useful in that respect.

The amount of available fertilizing material in the manure thus voided, depends upon the character of the food, and its relative proportions of nitrogen, which is always costly. As growing animals require not only food for warmth, but for growth also, the manure from such is less in value than from animals that are matured. And as more food is required to assist the body against cold winter than for any other purpose, the warmth of the quarters is a factor in the matter also, especially if it be correct that carbon is beneficial as a manure to the roots of plants.

Assuming that animals are well fed on average quality of food, then, for every 1000 lbs. of manure from horses more than 700 pounds consist of water, while the remainder is estimated at about twelve pounds of phosphoric acid, twenty-eight pounds of potash and five pounds of ammonia. The manure from the cow contains nearly 860 pounds of water in every 1000, the amount of phosphoric acid in the remainder being about five pounds, potash ten pounds and nitrogen three pounds, the manure from the horse being double the value of that from the cow in all the substances except nitrogen, and even in nitrogen the horse manure is nearly twice as rich. Of the different kinds of manure, that from fowls and the human species is the richest in nitrogen, but this includes the urine, the solid portions being very deficient in that respect. Manure from the sheep is the richest in phosphoric acid. Urine is always rich in ammonia, (nitrogen,) with proportions of potash and small quantities of phosphoric acid. Considering this fact, too much importance cannot be given the saving of liquids, that from the human species being valued at half a cent. per pound. The value of the solid portions of manure from a horse for one year is said to be about $10, while the value of the liquids from the same source for the same period is nearly the same.

Considering the high value of the liquids, which are always immediately available as plant food when applied to the soil, the manure must be protected from drenching rains and melting snows, for as part of the inert matter of the manure is changed by chemical action in the heap during the process of decomposition into soluble matter, it is always lost unless protected.

Tall Meadow Oat-Grass.

(*Avena elatior.*)

Professor Robson, one of the State botanists of Kansas, has the following upon a grass, which has been occasionally referred to in our pages, and which is a favorite in some parts of Virginia and West Virginia:

As an official of the State Board of Agriculture, it is my duty to report the introduction of a new tame grass into this State, which, after trial on a high upland farm for the term of two years, during which period we have watched it very closely during the various exhibits of its growth. We now claim that this valuable grass possesses so many excellent qualities as to place it in the front of all the cultivated tame grass. In looking over our notes we find—

1st. That the seed will germinate and grow as easily as common oats.

2d. It maintains a deep-green color all seasons of the year.

3d. Its roots descend deeply into the subsoil, enabling this grass to withstand a protracted drouth.

4th. Its early growth in spring makes it equal to rye for pasturage.

5th. In the next year after sowing it is ready to cut for hay, the middle of May—not merely woody stems, but composed in a large measure of a mass of long blades of foliage. This crop of hay can be cut and cured, and stowed away in stack or barn, long before winter wheat harvest begins.

6th. It grows quickly after mowing, giving a denser and more succulent aftermath than any of the present popular tame grasses.

For several years we have been looking for a grass that would supply good grazing to our cattle and sheep after the native grasses have become dry and tasteless. In the early portion of 1881, our attention was called to a tame grass which had been introduced into the State of Michigan from West Virginia. This forage plant was causing some excitement among the farmers in the neighborhood of Battle Creek. So we entered into a correspondence with a friend living there, and obtained ten pounds of seed for trial. The result has been satisfactory in every respect. The seed was sown April 1, 1881. It germinated quickly, and the young plants grew vigorously. During the whole summer they exhibited a deep-green color, and did not become brown, like blue-grass, orchard grass, and timothy. As soon as the spring of 1882 opened, growth set in rapidly, and continued till the latter end of May, at which period it stood from three to four feet high. At this time it was ready for the mower; but as the production of seed was the object in view, it was not cut till the second week in June. The plot of ground of about half an acre, on which ten pounds of seed was sown, produced three barrels of seed.

We exhibited a little sheaf of this grass at the semi-annual meeting of the Kansas State Horticultural Society, where it excited much attention—the height, softness of the stem, length of blade, and sweet aroma surprised every one present.

On the last day of August, we went into the plot with a sickle, and cut two handfuls of aftermath which measured twenty inches in growth. This we tied to a sheaf of the June cutting, and exhibited the same at the State Fair, where it attracted much attention and comment.

Here, then, we have a grass that will insure a "good catch" if the seed is fresh; that can endure severe drouth; that produces an abundant supply of foliage; that is valuable for pasture in early spring, on account of its early and luxuriant growth; that makes a valuable hay; that shoots up quickly after being cut; and affords a fine crop of aftermath for grazing during the late fall and winter months.

We are very anxious that the farmers of Kansas should test this grass during the season of 1883. Still, our advice is not to invest too largely in the experiment. Purchase from five to ten pounds of seed, and give it a fair trial, and we are confident that the experiment will be satisfactory. We disclaim having any personal or financial interest in this new addition to our farm products; our whole aim being to benefit the agriculturists of our progressive State.

The name given to this valuable grass in the State of Michigan is "Evergreen," but this is only a local synonym. We find its scientific name to be *Avena elatior;* its common name, "Tall Meadow Oat-grass."

As we want to make this paper a practical one, we give our mode of culture. The ground should be plowed in the fall, and early in the spring, as soon as the soil is in good tilth, sow broadcast two bushels (or twenty-eight pounds) of seed to the acre; cover well with the harrow, both lengthways and across the piece of ground sown. Should the ground prove weedy, cut the weeds down with the mowing machine in June, and leave them upon the surface, and they will afford shade to the young plants.

We find by correspondence that this grass is extensively grown in eastern Tennessee, and is very popular in that portion of the State. We find also that in some portions of western Virginia it is largely grown for hay and for grass. It is known as tall meadow oat-grass in each of the States mentioned above.

Water on the Wheat Ground.

The greatest enemy of the wheat crop, says the Germantonwn *Telegraph*, is too much water. It may be said that the wheat root is more susceptible to injury from too much water than many of us believe. To be sure, there is a general impression that an overdose of water is bad, but the full force of the impression is seldom felt as it deserves to be. Water laying around roots does not always kill wheat plants, but many of the roots are injured, and the few that are left are not able to do the work that all were intended to take part in doing. If any one will dig up a wheat plant in spring, which has stood all winter in a wet place, he will see exactly how this is. Only living roots close to the surface, and all below this may be injured.

The English seem to understand this water injury better than we do, and provide against it on wheat lands by numerous furrows; in some cases of flatish land one-twentieth of the whole area may be counted as surface furrows; and yet with this waste of ground, as some would say, they beat us considerably in the number of bushels they get per acre. It is supposed by many that whether we have a good wheat season or a bad one depends more on the quantity of rain we get at various seasons, or the condition of the ground or of the plants at the time the rain falls. If it goes away through the ground rapidly, it is good for the plant, though in large quantities; but if it lies long it is an injury. Thus, if a piece of land is rather flat and the ground is frozen deep and stays frozen after the surface has thawed, and rain or melted snow is let in, the frozen bottom keeps the water from passing away, and so injury results to the roots. On sloping ground the water passes out on the lower position, and in these cases not so much injury results. There are, no doubt, many causes which conspire to injure crops, but this overdose of water is very likely to be one of them, and it will be wise for all those who are interested in wheat culture to take every precaution to carry off water which may fall on the land. Open ditches or plow furrows, as many do; they are very useful to this end. Attend to this carefully, and it will be found that wheat culture will be as productive as ever it was, and will continue to be so.

Diversified Farming in the South.

W. S. Barron, of Bartow county, Georgia, writes to the Commissioner of Agriculture of that State as follows, concerning his farming operations:

"I cultivate eight acres of land as follows: Two acres in corn, peas and pumpkins; it makes me eighty to one hundred bushels of corn, twenty to thirty bushels peas, and three hundred to five hundred pumpkins, weighing from twenty to fifty pounds each. One acre in sweet potatoes, making one hundred and fifty to two hundred bushels. One acre in turnips and Irish potatoes, about two hundred bushels. One acre in wheat, twenty-five to thirty bushels. Three acres in oats, from forty to sixty bushels per acre.

"I keep two milk cows; the butter more than pays for their food; the buttermilk is fed to my hogs, thereby raising more than twice as much bacon and lard as I can consume. I keep money on hand and pay cash for everything I buy. I also raise a few extra fine beeves and milk cows for sale. I never carry my stock or provisions to market and *ask a man what he will give me for it.* As I never go in debt I keep my produce until people want it, and then they will come to my house and ask me what I will take for it. I am fifty-three years old. I never bought a sack of guano nor raised a bale of cotton in my life. I live at home and do my own work. I have plenty to eat and wear and some for charity."

And the Commissioner replies to him, very pertinently:

"Pursued as you follow farming, it becomes the only perfectly insured business among human avocations. While God sends rain and sunshine to bless the earth, and the farmer feels that he must not only sustain his own family from the soil, but the *non-producer* by his surplus, there can be no such word as fail.

"With industry—sensible economy—cheap manure and plenty of it, and then abundance of home supplies, with our climate, water and other advantages, we will in the near future be the most comfortable and well to do people on earth. I wish you all success, and your example universal imitation."

THE WHEAT SUPPLY.—*The Cincinnati Price Current* has made a special examination of the wheat stocks in the country. Report shows the total supply of wheat to be 175,000,000 bushels. To this is added 35,000,000 bushels in flour in the hands of dealers, making a total of 210,000,000 bushels for the remaining half of the crop year. The estimated requirements for that time are, for domestic food, etc., 126,000,000 bushels; for export, including flour, 57,000,000 bushels, leaving a surplus of 52,000,000 bushels. This is calculated upon the basis of exports of 120,000,000 bushels this year against 148,000,000 bushels last year.

Live Stock.

Stock for Farmers.

Messrs. Editors American Farmer:

I think there is a wrong impression with some of our fancy stock breeders that farmers can't see and don't know their own interest. A fancy stock breeder in our neighborhood, when showing his stock and stables to a farmer, remarked that he was surprised that all farmers did not go for registered stock. As a general thing, farmers have their fancy for stock the same as he has, with the difference that they breed for the multitude at remunerative prices, while the fancy men breed for exhibition and fancy prices. The farmer has a regular demand while the latter have to hunt up their purchasers and prove their ancestry. Most all farmers think they have some No. 1 animals and raise others from them and improve as opportunity offers, the proof of which is that most all of the native stock are mixed with the breeds that have been imported and scattered over the country, and for general purposes are the best, with the difference they have not kept a family record, which, if they had and the register was stretched out, they would have to take a trip several times round the world to find where they originated.

When a farmer has a good cow he is very apt to find it out without looking up its pedigree, and he has an opportunity of breeding to such sires as he may fancy, and if successful in making good selections, can, in a few years, get up a herd equal to the best—*minus* the pedigree. S. K. C.

Training Colts.

In considering the question when to develop the speed of colts, says *Wallace's Monthly*, it will be seen that we have simply taken advantage of the natural inheritance at the period when it is the most receptive and teachable. In now taking up the question of how to develop them, we will lay it down as a primary rule to follow nature in every respect that is possible. The old method of straps to hold the head down, and straps to keep the head up, and a bit in the mouth to hold the head straight, and strong reins to restrain natural action, are just so many artistic cruelties, without reason or sense, that have come down to us from a past and slower generation. If the colt wants to go with his head down let him go, and if he wants to go with his head up let him go. He knows better where he wants his head than you do. Don't annoy and discourage him with martingales and overchecks and the usual paraphernalia that tends to make him feel that he is no longer free to extend himself on his own promptings, but that he has become a machine in the hands of his master.

Early Breeding and Early Maturity.

Some discussion as to the best age for heifers to commence breeding has appeared in the pages of the Journal this year, and the objection that early breeding tends to injury eventually, was urged in favor of a general practice of making three years the age of first calving, for heifers of the heavier beef breeds, although an earlier age might be allowed in the case of the lighter and dairy breeds. On the other hand, an appeal to the Aberdeenshire practice of putting heifers to breed so that they produce their first calves at 24 to 26 months old, was introduced to show what is actually done in one of the very first beef-growing districts of the British Islands; and it transpired that the practice was found necessary, lest the heifers should prove barren, as they often do if allowed to run on too long; moreover, that a year's rest at three or four years old allows the heifer to make up her hindered growth and renew her strength. To this, further objection was made on the ground that it was the liberal rearing of the heifers that endangered their fecundity, and that with lower keep they might safely go on another year, and bring their first calves at the age of three years. This is doubtless very true, and it is perhaps also true that a heifer so treated is more likely to live and breed to a good old age than a heifer more generously reared, and allowed to bring her first calf at two years old. But, granting all this, we still have to consider whether heifers slowly reared are as likely as those somewhat pushed in growth to become the mothers of steers which may be made ripe for use at two years old. We do not mean in isolated cases, but over a span of half a dozen generations or more. Of course it is possible to force forward by high keep the steers bred from a line of poorly reared dams, but would they answer to that high keep as readily and as profitably, and be fit to kill off at so early an age, as steers bred from a line of dams whose early development has been steadily encouraged, generation after generation? If the Scotch breeders are mistaken in their practice, they have not yet discovered their error; and it is understood that few other British breeders can compete successfully with those of Aberdeenshire in the profitable productionof beef.—*Nat. Live Stock Journal.*

Don't Give Up the Flock.

There is considerable depression in the sheep and wool industry of the country says the *Breeders' Gazette.* This is not at all unprecedented. There have been much more serious depressions in the not very distant past, for which there have been several causes. Whatever effect the tariff reduction may have had, this alone can not explain the lowered prices and feeling of doubt.

The rapid increase in the number of sheep, especially in the West and Southwest, has had much influence. The important thing is to know what is best to be done. One thing we count certain. It is not wise to give up in despair or disgust; selling out flocks, resolving to have nothing more to do with sheep. Rarely will it be wise to make extreme crosses, to try to radically change the character of the flock. It will be wise, in many cases, to reduce the numbers; at least to weed out the inferior animals; possibly to dispose of the older sheep that are in fair flesh.

We incline to the opinion that, in general, it will be better, in the Central States, to give increased proportionate attention to the breeds which are valuable as much for their mutton as for their wool. There has been comparatively little cause for depression to those who have had good mutton sheep for sale. Good fat sheep will not, probably, fail to be in good demand this year, nor next. The farther West has some exceptional advantages for growth of fine wool, but it cannot compete on equal terms with the Central West in mutton production.

Cost of Pork on Corn of 1883.

A correspondent of the *Prairie Farmer* thus figures up cost of pork on corn raised last year in the West, notoriously of poor quality:—I have weighed my hogs every week and also the corn I fed them, and for the benefit of your readers I will give the result:

Dec. 10—	15 hogs,	weight	4,180....	
" 17—	"	"	4,280....	ate 960 lbs. Corn.
" 24—	"	"	4,410....	" 864 "
" 31—	"	"	4,572....	" 816 "

This gives a gain, in twenty-one days, of 442 lbs. and they ate in that time 2,640 lbs., or 87 1-7 bu. corn.

The corn was planted about the eighth of May; was the large white variety; is quite loose on the cob, and a good many of the ears are mouldy. A common bushel basket holds of it in ear 35 lbs. The hogs were fed the corn in ear twice a day, and had all the water they wanted to drink. This gives 9 62–105 lbs. pork to the bushel. At the present price of pork ($5.25) it would make the corn worth about 49½ cts. per bushel.

The weight of corn given is its weight shelled, as it shells out 55 lbs. from 80 lbs. in ear.

Grades of Hogs in Baltimore Market.—To the inquiry of a subscriber in Delaware, we would say that in this market the heaviest hogs, weighing from 250 to 350 lbs. gross, command the highest prices, if of good quality. "Good" are hogs weighing from 175 to 225 lbs.; "fair" weighing from 140 to 160 lbs., and "common" are tail ends, such as stags, piggy sows, and very thin stock scarcely fit to slaughter.

Grease, So-Called.

This ailment occurs sometimes in the fore feet, but oftener in the hind feet; and though neither contagious nor epizootic, it not unfrequently appears about one time or within a brief period, on most or all of the horses in a stable. It essentially consists in a stoppage of the normal secretions of the skin, which is beneficially provided for maintaining a soft condition of the skin of the heel, and preventing chapping and excoriation; and it usually develpes itself in redness, dryness and scurfiness of the skin; but in bad or prolonged cases, it is accompanied with deep cracks, an ichorous discharge, more or less lameness, and even great ulceration, and considerable fungous growth; and in the worst cases it spreads athwart all the heel, extends on the fetlock, or ascends the leg, and is accompanied with extensive swelling and a general oozing discharge, or a peculiar strong, disagreeable odor.

Most of the causes of grease are referable to bad management, especially in regard to great and sudden changes in the exterior temperature of the heels. The feet of the horse may be alternarely heated by the bedding and cooled by draft from the open stable door; or they may first be made hot and sensitive by the irritating action of the urine and filth on the stable floor, ahd then violently reacted on by the cold breezes of the open air, or they may be moist and reeking when the horse is led out to work, and then chilled for a long yeriod by the slow evaporation of the moisture from them amid the clods and soil of the field; or they may be warm and even perspiring with the labor of the day, and next plunged into a stream or washed with cold water, and then allowed to dry partly in the open air and partly in the stable; and in many of these ways, or of any others which occasion sudden changes of temperature in the heels, especially when those changes are accompanied or aggravated by the irritating action of filth, grease is exceedingly liable to be induced. Want of exercise, high feeding, and whatever tends to accumulate or to stagnate the normal greasy secretion in the skin of the heels, also operate, in some degree, as causes. By mere good management and by avoiding these known causes, horse owners might prevent the appearance of this disease altogether.

In the early, dry, scurfy stage of grease, the heels may be well cleaned with soft soap and water, and afterwards thoroughly dried, and then treated with a dilution of Goulard's extract—one part to eight parts of water, or one part with six parts of lard oil. In the mildest form of the stage of cracks and ichorous discharge, after cleansing, some drying powder, such as equal qualities of white lead and putty (impure protoxide of zinc) may be applied, or simply the mixture of Goulard's extract with lard oil may be continned. In the virulent form of cracks, accompanied with ulceration, the heels ought to be daily washed clean with warm water and afterwards bathed with a mild astringent lotion, and every morning and evening thinly poulticed or coated with carbolized ointment; and the whole system ought to be acted on by alteratives, by nightly bran mash, and, if the animal be in full condition, with a dose of purgative medicine. In the worst and most extensively spread cases, poultices of a very cooling kind, particularly poultices of scraped carrots or scraped turnips, ought to be used day and night, both for the sake of their own action, and as preparatives to the action of the astringent application; and the whole course of treatment of the inflammatory action, previous to the stopping of the discharge. Nothing tends so much to prevent grease and swelling of the legs as frequent hand rubbing and cleansing the heels carefully as soon as a horse comes in from exercise or work. In inveterate cases of grease, where the disease appears to have become habitual, in some degree, a run at grass, when in season, is the only remedy. If a dry paddock is available, where a horse can be sheltered in bad weather, it will be found extremely convevient; as in such circumstances, he may perform his usual labor, and at the same time be kept free from the complaint.—*Prairie Farmer.*

The Dairy.

Milk Cows.

The January meeting of the Deer Creek Farmers' Club was held at the residence of Mr. Thos. Lochary. The subject appointed for discussion was Milk Cows, and our friend of the *Ægis* supplies the following report:

Mr. Lochary said every farmer should endeavor to improve his stock, and especially his milk cows, which every farmer must have, They are not only profitable to keep but profitable to raise for sale. He regarded the Jersey as the best for milk and butter. He had read of Jersey cows making 800 lbs. of butter a year. We can't buy that kind, but we can get good bulls and improve our stock by crossing them with common cows. Cows should have as great variety of food as we can give them. An ordinary sized cow about 8 lbs. of corn and cob meal a day with other food. Bran is excellent to mix with meal. He thought fodder had a tendency to make butter light in color, while good well cured clover hay gave the butter a richer color. In raising beef cattle it is not best to let the cows calve until three years old, but for milk and butter they should be allowed to calve earlier.

Edward P. Moores thought grade Alderneys and Jerseys best for milk and butter. Milk cows require a great deal of attention and feed, and if it were not for the convenience of having the milk a man had better feed a steer and buy his butter. A cow should be fed every time she is milked. It will make them quiet and bring them to the yard at milking time. A farmer who has a good cow should raise all his heifer calves. There is more profit in that than in the cow herself. Clover hay, bran and meal mixed, make a good feed.

Wm. Slade also regarded Jerseys as the best for milk and butter. Farmers should keep the very best cows, as it costs no more to keep a good cow than a poor one. Full bred cows are mostly quieter than common breeds. Twice a day is often enough to milk cows, but they should be milked and fed regularly. Warm slop feed in winter is the best for cows.

John W. McCommons was of the opinion that for butter the Alderney cow, with plenty of good feed, is best. Good clover hay is better than fodder for a cow. It will make richer butter. Steaming food is of great advantage and slop feed should be given occasionally. Clover hay scalded, with bran and meal over it, makes a good feed.

Geo. E. Silver believed the Jersey or Alderney is the best cow for milk and butter, but a cow must be well fed if you want her to make a great deal of butter. He preferred Short Horn stock to raise calves from, but they do not make as good butter as the Alderneys. An Alderney is only profitable for milk and butter. He thought fodder gave butter a bitter taste. No kind of coarse food is better than clover hay, and a change of food is profitable, as it keeps a cow healthy. The flow of milk may be increased by slop, but the yield of butter will not be increased, nor will the quality be so good. He likes to feed on corn meal in winter time. It keeps a cow warm, but it is not so good for milk. Several farmers might join together and keep a good bull.

John Moores said he had as good cows 25 or 30 years ago as can be had now. They were of mixed breed, partly Devon and partly Durham. There are poor Jersey as well as other breeds, and those families ought to be avoided in breeding. Certain strains are fashionable and make a great deal of butter. They are hard to get and those who have them are unwilling to let the community in general derive any advantage from them. Mr. Moores urged the importance of every poor man with a family keeping a cow. The cow would enrich his garden and the refuse from the garden would keep a hog. Besides the economy the milk from a cow would be of great advantage to the health of the family. A cow can be kept the year around for $1 a month for rough feed and pasture. He thought, also, there ought to be some rights on the roads for a poor man's cow. Thousands of acres of land are lying out, doing no good to anybody. The little inconvenience farmers are occasionally subjected to by stray cattle might be borne for the good of our poorer neighbors. The Jersey is undoubtedly the best cow to raise. They sell best and they make the most butter. He had kept three little cows, 2, 3 and 4 years old respectively, and they made 29 lbs. of butter a week. Cows that make a great deal of butter are heavy feeders. Cows should be encouraged, through the winter, to eat all the good clover hay they can, with some meal. They should be kept up at night and let out in the morning for exercise. The racks and troughs should be cleaned out, the entire stable kept clean and freshly littered daily. Butter making will pay better than canning.

Johns H. Janney had not made up his mind which is the best breed of cows, but he did not think Short Horns suit this country. It is true their calves are fine and profitable to raise, but he had five or six Short Horns for several years and had to buy butter. Now he has two Jerseys and has plenty of butter. He was inclined to believe that the Devons are the best stock for our farmers to keep. The calves are good and they make fine steers or oxen. He has one that makes as good butter as the Jersey. The Ayrshire is also good for milk and fair for beef, and a cross of Ayrshire and Jersey makes a good healthy and hardy cow. Cows must be well fed to make plenty of milk and butter.

Mr. Janney thought canners make a great mistake in not building silos in which to preserve their sugar corn fodder. People at the north raise sugar corn for ensilage alone and we allow hundreds of acres to go to waste. It cannot be cured properly, but it can be put in silo after we are done canning. It would be better, however, to place it in the silo while full of sap. The cost of putting it in a silo is $1 a ton. A pit 20 feet square and 16 feet deep will hold 152 tons. The inside may be boarded up or the sides cemented. It should be filled as full as it will hold, the stalks and blades being all cut up, and when weighted 100 lbs. to the square foot will sink one-fourth. Ensilage is no longer an experiment. Butter making in winter is more profitable than at any other season, and with a silo and the cows coming in fresh in the fall, the butter will be as good in the winter as in the summer. The cows should be fed on corn meal and ensilage morning and night, with clover hay in the middle of the day.

Mr. John Moores doubted the economy of the silo, on account of the great amount of extra labor it would involve, but thought it might be of advantage to canners, in saving their sugar corn fodder.

S. B. Silver, the President, said that as we must have milk and butter we should get a good stock of cows, and the Jersey or Alderney will do very well for this purpose. A Durham bull crossed on Jersey cows would make good calves, from which more could be made by raising them than by buying steers. Cows should be treated well. Good clover hay cut up with corn meal and bran on it makes a good feed. He did not like fodder for milk cows, as it gives the butter a light color and a bitter taste. Cows should be fed and milked regularly.

Adjourned to meet at the residence of Mr. R. John Rogers, Saturday, February 9th. Subject: "Will it pay to use fertilizers for corn on land that will yield from 12 to 14 barrels per acre without fertilizers?"

Ensilage in a Milk Dairy.

Hardin Brothers, milk farmers in New York State, contribute the following as to their experience with ensilage to the *Country Gentlemen*:—Having received so many inquiries in regard to the coustruction of our silo, and of our manner of feeding, etc., we conclude to write you a detailed account of it for publication, and thus benefit many who have not written directly to us. In the first place, we knew nothing of silos or ensilage, except by reading accounts in agriculture papers from those who gave their experience with them. The greatest drawback was the cost of building a stone one, and having plenty of room in our barn, we conceived the idea of boarding up a bay for a silo, so as to make it tight. We made inquiries of men who had silos, and upon their advice we began it one year ago last June. We first placed tarred paper upon the studding, then over that we placed matched spruce planks 1¼ inches thick. This bay was in a barn which was 20 by 24 feet, and about 20 feet deep, being all above ground. Around the bay under the sills we built a wall of stone and cement, and cemented the bottom, so that it was as smooth and hard as a floor.

In September we began filling, and owing to lack of help we were about three weeks putting in about 120 tons. After filling, no weight was put on until we began husking corn some time afterward. Then we piled the stalks upon the silo. We said that no weight was put upon it, but we will modify that a little by saying that we placed over the top tarred paper and rough hemlock boards. We had some misgivings as to its keeping well, so we opened it about a month after filling, and great was our surprise to find the fodder in splendid condition. When given to the cows, they ate it ravenously, and did not leave a particle in their mangers. A great many of our neighbors laughed at us when we were filling the silo. They said that "the stuff will be all rotten by spring." We replied that we expected it would be, but we intended to put it through the cows first. After opening, we could laugh at our neighbors, as the old saying is that "those laugh best who laugh last." We found several tons of the fodder spoiled in two corners that were not exactly airtight: the remainder was in splendid condition.

Being so well pleased with our success with the silo, we sowed a large field of corn again last season, but, owing to the dry weather, we did not have a very large crop, and the frost came before we had the fodder all put into the silo. We put in what we had, in just a week, and did not cut the stalks as short as last year. Last year we cut one quarter inch; this year half inch. We find that the ensilage is, if anything, better this year than last. We are now feeding twenty-five cows for milk, and find that upon the following ration they give as much milk as they would if in good pasture: About 6 o'clock in the morning they are milked, and then fed one bushel each of ensilage, upon which we put four quarts of buckwheat bran. At 9 o'clock they are turned out into a yard to drink and exercise while the stables are cleaned and fresh bedding is put in, which consists of the manure from the horse stable, wheeled in and scattered in the trench to absorb the urine. The manure is all thrown into a building prepared expressly for protecting it from rains. At 11.30 o'clock the cows are put into the stables and fed one peck of carrots, and all the timothy hay they will eat. At 4 o'clock they are again milked and fed the same as in the morning.

We are getting as much milk by feeding ensilage, and a small amount of grain, as we would get on good pasture. For the purpose of comparison we will state that one of our neighbors is feeding cows for milk also, but he does not make ensilage of his corn fodder, but shocks it in the field and leaves it until he wishes to use it, then draws it in and runs it throught a cutting machine. His rations are all the cut fodder the cows will eat, and a peck of buckwheat bran at each meal. You will thus see that he is feeding three times as much grain as we are. We fed slops up to December 1st, and then it became so cold that the slops would freeze at night, therefore we concluded to try dry bran, and are perfectly satisfied that cows will give fully as much milk on dry bran as they would on the same mixed up with water. In conclusion we would recommend to any farmer who keeps five or more cows to build a silo, believing that he can save enough in grain to pay its cost in one year.

Dairy Houses for the South.

O. B. Bliss, a well-known authority on dairy matters, writing to the *Country Gentleman* in reply to an inquiry as to the construction of dairy houses adapted to the climate of the Southern States, where neither ice nor running water can be had, suggests that the dependence must in that case be upon the economizing of the cooling influence of the night air, which may be rendered quite efficacious. Artificial evaporation is some times a help, but it generally costs more than it comes to. In that climate it is better that the dairy house should be an isolated building. In selecting the location reference should be had first of all to a free circulation of pure air. Shade, though desirable, is of secondary importance. That can be supplied; air cannot. There is nothing gained in a climate where the water is never cooler than 70 deg. F., in setting a dairy building into the ground, nor is there anything gained by raising it up so as to permit a circulation of air under the floor; both common errors of construction there. The best foundation for a good, cheap structure for the purpose named is a concrete pavement with a wooden floor laid flat upon it, suitable joists for fastening it being imbedded into the concrete. Thick walls of stone, concrete or adobe are used, and are entirely effective in preserving the right temperature through the day, with only the small variations caused by the use of the apartments. This implies a complete control of the contained air, however.

Double windows, and tight at that, are necessary. Double doors so arranged that one may be closed before the other is opened are indispensable. The enclosed space must be ample. The larger the amount of confined air the less it will be affected by the warm milk set in it. Four cubic yards of air to a gallon of milk produced at a milking is none too much. Ventilation should be through a louver or other ventilator at the top, and only at the top. The cool night air will flow in, displacing any warmer air, and will remain there until some side aperture is opened for it to flow out, or until it is warmed and driven out at the top and replaced by cooler air. It is not necessary to change the air of a dairy house, but it may be changed at night by opening the side door.

Wooden walls may be substituted for those of masonry, perhaps more economically. In that case there should be at least two sets of air cells all around, with no intercommunication, and open only at the top. This implies the use of two lines of studding and three of boarding, all of which should be matched. The roof should also be double. The efficiency of the whole thing depends upon the circumstances that cold air is heavier than warm, and will stay in any apartment which is open only at the top, just as water stays in a jug. Heat does not pass through air. It only sets it in motion. When the external heat affects the air in the first series of cells it becomes expanded and gives place to heavier air on the other side, and it takes a long time for the air in the second series to be affected, and so on. One ventilator on the top is all that the largest house requires. If it is desirable to economize the very last particle of the cooling effect of the air, it would unquestionably be good economy to enter the room by the gable, by flights of stairs upon the outside or inside, so as not to be under the necessity of opening the doors when the outer air is warmer than within the house.

Of course, air-cooling implies the use of shallow pans for setting the milk, and it will generally be found profitable not to attempt to fill them at that. Nor is their use, except possibly on the score of labor, to be regretted. I have not seen enough of Southern milk to speak very positively on the subject, but what I have seen leads me to believe that, with scarcely any exception, it is of the quality which the Danish experimenters call heavy, in which case the best results are always obtained from shallow setting.

I have omitted all allusion to churning and working rooms, for it must, of course, be understood that in such a climate all work of every kind must be done elsewhere than in, or where it will affect, the milk-room proper.

THERE is no point about which the farmer is so apt to be in error, the American *Dairyman* says, as he is in his calculation of the temperature of wells and springs on his farm. He always thinks they are colder in summer and warmer in winter than they really are. The only possible means of approximating to the correct temperature is to put a thermometer in the water testing for the greatest heat along in September and for the greatest cold any time after January first and before warm weather sets in. Many a man does his milk and butter a great injustice by over estimating the cooling power of his spring or well water.

PROF. HENRY, of Wisconsin Experimental Farm, holds it is economy on the part of the farmer who has a great straw stack, and small herd of cattle, and some hay, to sell the hay at $7 or $8 per ton, and spend the money in buying bran at $11 and $12, and feed it with the straw, together with some oil-meal. Good bright straw is made equal to hay by the addition of the protein in the bran and meal, and the whole is thus made into a far better quality of manure than usually comes from the usual way of feeding the hay, and half wasting the straw.

Poultry Yard.

Raising Ducks.

Ducks possess many advantages over other domesticated fowls. They are very hardy, and are liable to but few diseases. They take to confinement much better than most kinds of fowls. A very cheap fence is sufficient to keep them in the place desired. They are not liable to be injured by vermin. Their feathers are of considerable value. They stand transportation, when alive or dressed, better than most kinds of fowls. They are great egg-producers. It is true that they are heavy eaters, but they make a good showing for the food they consume, and will eat almost anything, vegetable or animal, that any bird or animal will. They are not liable to stray off long distances, as turkeys and geese are. Ducks are not as reliable sitters as hens, neither are they as good mothers. On these accounts it is better to allow hens to hatch the eggs and "bring up" the young ducks. Generally ducks show little disposition to sit after they have laid their first litter of eggs in the spring. They will often lay three litters of eggs before they show a disposition to take to the nest. Two litters may be hatched by hens, and the last may be hatched by the ducks themselves. Hens will ordinarily be more successful in raising good flocks. This is largely owing to the fact that they keep the birds away from the water when quite young. By so doing they keep many of them from being destroyed by snakes, turtles, and water animals. Ducks will be much more likely to live and thrive if they are not allowed to go into the water till they are at least six weeks old. Hens will keep them from it, while ducks will encourage them to swim almost as soon as they are out of the shell. If young ducks are raised in an inclosure, a tub or half hogshead may be sunk in the ground and filled with water for them to swim in. Security may in that way be insured against their enemies.

People who desire to raise ducks often covet the advantages of those who live on the shores of a lake or the banks of a large stream or river. They think a large body of water is almost essential to raising ducks successfully. They do not take into consideration the fact that water snakes, minks, muskrats, and turtles are likely to abound in these places, or the additional fact that a large body of water often tempts ducks to swim off to a long distance and become lost. Small bodies of water, under the control of the breeder, are much better than lakes, rivers, or even very large streams. A comparatively small spring will afford sufficient water for several hundred ducks, if the supply is properly managed. Small and quite shallow ponds can be excavated along the line of the overflow and their sides covered with gravel or sod. By taking pains to form little islands in these ponds they may be made ornamental as well as useful. Artificial ponds suitable for the uses of ducks may be filled with the water escaping from artesian wells, raised from ordinary wells by wind power, or furnished tile laid for drainage purposes. Good ponds may also be made by building dams across small streams that flow from a farm. If these small ponds are kept free from grass and bushes, they will not be likely to be infested by animals or reptiles that will prey on the young ducks. They can be readily cleaned out when they become foul, by cutting off the supply of water and allowing that which is foul to flow off. An ordinary dry-goods box with a door cut in one end affords a good house for a flock of growing ducks. These little houses may be located on the islands in the ponds or on the side of them. If there are several ponds on a place each one may be devoted to one flock of ducks. The superintendent of the public parks about this city have shown how ducks and their habitations may aid in rendering a place beautiful.

Ducks while laying should be kept in inclosures during the night, and until such time in the morning as they have dropped their eggs. Many ducks do not repair to a nest for the purpose of depositing eggs. They drop them on the ground, and it is necessary to gather them up. Great improvement has been made in the varieties of ducks during the past few years. The most popular breeds are the Aylesbury and Rouen. Birds of either of these breeds mature early and grow to a large size. Their plumage is beautiful and their flesh is fine. There is money in breeding ducks to sell to persons who wish to raise them, as well as in producing birds to supply the general market.—*Chicago Times.*

Roosts.

The primitive roost was the old scraggy apple tree on the north side of the barn, and the hens climbed high to find a limb small enough to grapple so firmly when they sat down that the winter storms would not blow them away from their sleeping places. Then, when the farmers began to improve the condition of their fowls and give them shelter in shed or barn, they put the roosting poles up, up, because they had noticed how high the chickens roosted in the trees. Now, as there are a vast number of hens which would score a goodly number of points on everything else but flying down from a high roost, we would recommend putting the perches low, not more than four feet for the highest, and you will save the stubbing and bruising of the feet, and bending the breastbones, which often occur when the miscalculating fowl tumbles over in a heap while trying to come down from a high perch.

Then, again, teach the boys and all hands not to make the large fowls jump from high points on the stairs, if they chance to find them up there sunning themselves, but step gently and carefully, so that they will move aside, and then hop down from stair to stair. We have noticed that the boys who always drive the cows with a cutting whip, which makes every one run to keep out of its reach, are not often quiet and gentle enough among the fowls for their comfort or the owner's profit. Keep quiet and roost low, is a very good motto.—*American Poultry Yard.*

The New York Fanciers' Show.

One of the largest Poultry Shows yet held in this country ended on January 29th, at the Madison Square Garden, in New York. It was held under the auspices of the New York Fanciers' Club. The great space in the Garden was filled, and the show continued for seven days—and although the weather was inclement, yet each day the attendance of visitors was very large. There were over thirteen hundred entries of poultry, numbering over 6,000 birds. The largest class was the Plymouth Rocks—one single exhibitor showing nearly 200. The Light Brahmas were also a large class. The pair scoring the highest was won by birds owned and bred by Mrs. Mara, of New Bedford, Mass. Every known variety was represented. The Leghorn class was a grand one. Birds were there from all parts of the United States. The Pigeon display was extensive.

Through the centre of the immense building were rows of aquaria, containing trout of all sizes from an inch or less in length to 16 inches; carp, cod, gold and silver fish, ides, Japanese fish, terrapins, &c. Also eggs of fish in various stages of incubation. Making an unusally fine and interesting display. Nearly two score of incubators were in successful operation, hatching chicks by the hundred daily. Quite a number of premiums were awarded to birds sent from Virginia. The competition in each class was exceedingly close, making the work of the judges laborious, and the extreme cutting and close inspection they gave the birds was very satisfactory to the exhibitors. The judges were Geo. O. Brown, of Baltimore; I. K. Felch, of Mass.; John E. Diehl, New Jersey; J. D. Nevins, Phila., and D. C. Pratt, of Mass. Sales of birds during the show were brisk, and all that were for sale were disposed of three days before the show closed. There was also a display of cats, some of which were valued at $1,000.

Financially the show was a great success and attracted many visitors from distant parts of the country.

The Apiary.

Bee Notes.

In a farmers' convention in Connecticut, a Mr. Jaffrey, in an address gave preference to the Italians, because they are stronger and more prolific. Bees will gather honey by moonlight in pleasant weather, especially when the bass-wood trees are in bloom. The Italians will fly farther in search of honey than the common bees, and three swarms of the former will store as much as five of the latter. The Italians also have the advantage of being able to obtain honey from red clover. It was his belief that the honey production might be increased five or six fold without exhausting the honey supply of the country. The fertilization of the garden raspberries is due almost wholly to the work of the bees.

Individual bees are short lived. In summer they seldom see more than forty-five days, while in winter the life period may extend to six months. Box hives are much to be preferred to the old styles, as they yield considerably more honey. On the question of how to winter bees there is a diversity of opinion. With 150 hives a cellar may be the best place, provided the temperature can be kept between 42 and 48 degrees. Burying hives in the earth is sometimes a good way, but whatever the method the bees should not be disturbed while in winter quarters, but kept as quiet as possible.

The chief honey producing plants in southern New England are yellow willow, skunk cabbage, the blossoms of all the fruit trees, and the hard and soft maples, white clover, the small fruits, bass-wood blossoms, golden-rod and asters. Buckwheat honey is admired by some, but most tastes would pronounce it very inferior. Syrup fed to bees does *not* make honey, it will be syrup still.

Two difficulties are rendering bee-keeping quite hazardous at the present time, a little insect resembling both the small hen louse and the red spider of the green house. The insect lives upon the bodies of the bees to the number of twenty or more on a single bee, and suck their life away. They are carried from one hive to another by contact of bees with each other while gathering honey from flowers. Not much is yet known as to the best methods of fighting the parasites. *Foul brood* is a name given to the other bee pest. In affected hives the young die before hatching, and the old bees seem to have no means or disposition to clean the comb. It is an old disease that was known nearly a century ago, and is spreading to an alarming extent in some of the Western States. Michigan suffered a loss of 5000 hives in one season. It is a disgusting disease as the dead larvæ emit a strong stench. Foul brood is spread by bees carrying honey from one hive to another. It is a fungus, and great care should be exercised in preventing its spread upon new territory.

Horticulture.

Kitchen Garden—February.

THE WHY AND THE WHEREFORE.—As in pruning a fruit tree one should not make a cut without being able to say why that particular branch should be removed; so, laying out the work of the garden for the approaching season, it is equally necessary to go over, mentally, the reasons which influence one in deciding upon a particular course of procedure. Is it locating of crops? then a leaf from the writer's actual programme will serve to illustrate. Plot No. 1 is the puzzle. What shall I plant on a piece of land where potatoes, tomatoes, anything in fact, that can be conveniently lifted, is regularly stolen? The parsnip is the only root raised here in quantity that cannot be taken without labor, and land must again go to parsnips or—go to grass. Plot No. 2 has been well limed and manured. Turnips want lime, and manure agrees with everything, so I expect a heavy crop of sweet corn before the turnips. No. 3 was heavily manured for spinach and ought to give late cabbage with or without a light sprinkling of bone. Here is a corner of level land just reclaimed. It was manured heavily in fall in the vain hope of getting a crop of cabbages from unsaleable plants—which were sold all the same—and is now just right for seed onions. Green onions can be put on the celery land, as they will be used up by planting time. And so I might go on; there must be reason for every new move.

The same with any new or modified treatment of crops. I consider a full crop of cow beets at harvest time a very pretty sight, growing as they do to such an immense size. But it is difficult to get a full crop when a seed-drill is used. So, if time will permit, I propose to try an acre or more planted by hand-rows two and a half feet apart, plants twelve inches. Then, if all goes well, they shall be weighed. In common with others, I have had trouble with bad seed corn. Now, a correspondent told us in a recent number to look out for and reject seeds with a dark speck at the base. Here is a good hint and profitable employment on a rainy day before planting time. I propose, too, to plant such articles as are wanted in small quantity or not much called for, on a very small space and thus leave more room for increased supplies of winter vegetables. Our small fruits suffer for want of mulching material; those who have it should apply liberally. I am satisfied that raspberries and currants and perhaps blackberries would be larger and finer if protected in this way from drouth. I propose to mulch a lot of currants, leaving a few bushes exposed and note the result. My plan with strawberries is now pretty well settled; it is to plant a new bed every spring and destroy a *two-year* old bed every fall.

The best method of raising tomato plants is in boxes in the greenhouse. Those who have this convenience need not be too early with hot-bed making. But as things in general thrive better in the hot-bed than elsewhere, the bed must be ready to receive the plants at the proper time. Those who have only frames should be ready to sow about the last week in the month. The soil should not be put on the bed until the violent heat has passed off. Keep close and shaded until the plants are breaking the surface, after which give light and air when necessary.

A correspondent of THE AMERICAN FARMER recently mentioned his trouble with young seedlings of asparagus, and asked for a remedy. I know of none except to weed them out. Whether the main crop would suffer by cutting the tops before the ripening of the seed cannot well be judged without actual experiment. On the one hand it is generally believed that the stems of a herbaceous plant in dying, in some way

contribute to the welfare of the parent stock, whilst we all know that seeds in the process of ripening are very exhaustive of the soil, and why not also of the root? On the whole it is not likely that much harm to the plants would result from cutting the stems before the seeds are ripe enough to grow.

JOHN WATSON.

Commercial Horticulture on the Peninsula, Its Progress and Possibilities.—No. 2.

Many years before the era of the great peach orchards of New Castle, Cecil and Kent, and before the means of rapid transport to market had made these orchards possible, there existed many large peach orchards in the southern part of the Peninsula, particularly in Accomac. These orchards were entirely of seedling trees, and were remarkable for their longevity and productiveness under the worst treatment. Their products were largely shipped in the shape of dried peaches, and equally as largely in the shape of the fragrant Accomac peach brandy. Many of these old varieties of peaches came with remarkable correctness true from the soil. One sort in particular, called Lemon Cling, almost invariably reproduced itself, though occasionally a freestone identical in shape and color. A white freestone variety, similar to the Morris' White, also reproduced itself with great regularity. The great majority of these seedlings, so far as my observation went, were inferior in size and quality. Those of us who remember these old orchards, however, regret the loss of the mammoth rosy-cheeked clings which our grand-mothers knew only by the name of "preserving peaches," and think none of the named sorts of the present day can equal them. Many of the old Heath seedlings were vastly superior to the Heaths now grown in the nurseries. The opinion then was universal that a poor soil was best for the peach, an opinion which I am glad to say I have always controverted, and which experienced growers have generally abandoned. Among the first orchards of budded peach trees planted in Accomac were those planted from trees sold by the writer in the years just preceding the war. One of these lots of trees was sold to an old gentleman who was firmly of the opinion that a fertile soil would not do for peach trees, and having an old sand field on which even sedge and poverty grass refused to grow, and which drifted in the wind, he planted it in peach trees. These trees, taken from the fat soil of the West Chester Nurseries, utterly refused to grow on this barren spot, and thereupon I was told that "your budded trees are of no account." But people are finding out that improved fruit, like improved live stock, will pay for intelligent care, and the most successful peach growers are those who not only plant in fair soil, but take care that it does not become impoverished from lack of fertilizing. I entirely agree with your correspondent, Dr. Stewart, of Delaware, in your last number, that a light soil of only moderate fertility is best for the growth of the young trees, as in such soil they develop a better supply of fibrous roots, and therefore transplant better. The cause of the stunted condition of many young orchards could be traced to the fact that they were grown in heavily enriched ground to sell by their height. On digging for sale the long feeding roots developed in the heavily dunged soil are mercilessly chopped off. They are planted in ordinary farm land and the whole of the over-developed top left on, and a stunted growth is the result. If the trees had been properly grown in the nursery, instead of a sappy, unripened growth of seven feet the first year from the bud, a neat little tree with four or less feet of hard, well-ripened wood would have been the result, with a mass of fibrous roots which could have been dug without mutilation. Such trees, planted in fertile soil, properly pruned, cultivated, enriched and cared for, would be as hardy and long lived as any of the old seedling stocks. During the height of the peach fever on the upper Peninsula, the planting and growth of the peach was too much a matter of mere speculation to be dignified with the name of Horticulture. Of late years the increase of disease and insects has compelled growers to make a more careful study of the necessities of the peach. The influence of the stock on the bud has been too generally ignored. The late Col. Edward Wilkins, the most observant cultivator and most original thinker among the large peach growers of my acquaintance, was satisfied that most of the irregularities in the dates of ripening of the fruit, which have at times so perplexed the growers, are due to budding on dissimilar stocks. He insisted that an early ripening variety budded on a stock grown from seed of a late sort, would naturally be retarded in ripening, and vice versa. One of Col. Wilkins' most successful and long-lived orchards was carefully propagated by himself on stocks of similar season with the varieties budded on them. One of these old trees when cut down furnished the fine newell-post for the stairway in the "Riverside" mansion. In the later years of his life Col. W. was much interested in the study of the Black Aphis on the roots of the peach and its connection with the yellows, and it is much to be regretted that his investigations in this direction were cut short by his death.

The fungoid nature of peach yellows and the similarity of its resting spores to those of the pear blight fungus have been noticed by more than one microscopist, though I am not prepared to say with Dr. Stewart that they are identical.* Both may be developed rapidly by injury to the roots of the tree, the yellows in the peach being almost invariably preceded by a bad attack of black aphis on the roots.

W. F. MASSEY.

Management of Land for Winter—Pear Blight.

Messrs. Editors American Farmer:

While old Boreas is puffing his cheeks near to bursting in the up to date unsuccessful attempt to send the mercury to zero, we can look on with complacency, as it gives an opportunity to visit one's friends and to look around to see what is being done by others, a matter too much ignored; and besides, we have given the old fellow a little job—one that we have been in the habit of giving him for years, and it has always been done in a most satisfactory manner. We haul out our manure on to the land as much as possible in the autumn, then throw the land into ridges, thus shutting up the manure so that it cannot be washed away during the winter, and is left besides in the finest possible condition in the spring, to be thoroughly incorporated with the soil by the preparation of the land for sowing.

Another reason why we put our land into this shape for the winter is, because the water in running off down the furrows must act upon the bare clay subsoil, and the furrows being so near each other—thirty to thirty-six inches apart—there is not sufficient force accumulates to wash to any extent, and besides all this there is the advantage of being able to get on to the land several days earlier in the spring than could be done if the ground were plowed flat—a matter of no small importance. I would also say that if I could make it convenient to do it, I would run a Miner subsoil plow with one horse down each furrow; that is, of course, when the subsoil is in proper condition to be worked.

Now, Messrs Editors, a word in regard to pear culture, fire blight, etc. Mr. Massey, on page 315, November 15, says "If N. F. F. will examine what I have written about a pear blight, etc., etc." Readers of THE AMERICAN FARMER, if interested in this matter, will examine for themselves what is written upon the subject in these pages, and N. F. F. has no intention of entering into a controversy as to the cause of this kind of blight, for whilst some of the most accurate scientists fail to agree as to the nature of this disease, bare assertions of your humble correspondent would only serve to provoke the risibility of those who have investigated the matter, and would be conducive neither to the pleasure nor profit of your readers. N. F. F. will therefore do as he has heretofore done, keep rigidly to personal practical experience.

Does this specific disease affect only the pear? We have seen something very similar to it, in its actions and results, on the oak. We use the term *similar* advisedly, as we doubt the ability of any one to determine, with any degree of accuracy, whether it be the same disease or not, without the aid of microscopic power of a high order, say 3,000 to 4,000 magnifying power. We can scarcely conceive of a gardener possessed of such an instrument, not only at this present time, but at any time since our progenitor "went back on his wife" about that fruit in the Garden of Eden. Please excuse the language, it may sound a little slangy, but it is expressive. Mr. M. writes as if I think the disease commences at the tips of the branches. The real blight which I have to contend with comes on patches, or spots, on the bark of the tree or limbs. Mind, I am not speaking of leaf blight nor of twig blight, nor do I assert that it is all the same disease, primarily. I have reference solely to that invisible, intangible something which lights down in one's pear orchard and, generally, the first warning of its presence, is that a limb has departed this life, or possibly an entire tree. Whether the disruption of a root will develop blight or not, one thing is certain, it does not need thirty years' experience to teach one that the summer is not the proper time to put a plow in an orchard deep enough to tear the roots off the trees, nor does my experience teach me that it is either desirable or necessary to do so at any season. I have always a sufficient depth of soil for cultivation without injuriously cutting the roots of trees. The whole matter of cultivating orchards or of leaving in grass for pasture or otherwise, as a *cause* of success, depends far more upon the judgment of the orchardist than as to whether there may be two or three inches of friable soil on the surface or a covering of grass, and whilst the writer has found it necessary at this place to change the condition of the orchard from sod to cultivation, it by no means follows that that would be best under all conditions, nor am I quite sure whether it would be sufficiently instructive or interesting to the readers of THE FARMER to justify the use of necessary space in explaining it. There are, however, readers of this periodical who do not know blight when they see it. A limb or a tree dies and the farmer knows that it is dead, but the idea that death commenced in a small spot in some part of the plant is beyond his ken. The question now is, having discovered the disease and the extent to which it may have affected a given plant, can we arrest its progress? My experience has led me to this conclusion—without any exception whatever—that it is most important to keep the trees in a good, healthy, growing condition, cut out all diseased limbs as soon as they appear and burn them. Under this treatment I find the trees *as a rule* outgrow the disease.

N. F. F.

Peach Culture.

(*Continued from page 18.*)

Messrs. Editors American Farmer:

The usual mode of manuring these trees upon their removal from the nursery, or transplanting them into a rich soil, insures an immense loss of vital force during the first fruiting period, especially as a corresponding amount of nourishment is impracticable during subsequent years. Moreover it requires more faith and diligence, upon the same principle that the old proverb is based, viz: "The indolent man wasteth not that *which he took* in hunting."

The young trees should not receive any manure until after the first fruiting is accomplished, and then each tree should be embraced in a wheelbarrow load of "long manure" from the barnyard, piled up around the stem of the tree, and confined thereto by a furrow thrown against it on opposite sides, *alternately, year after year*, but never before the blossoms. The peach moth is thus excluded from the tender bark near the root of the tree, and the bark above is hardened during the next winter by the removal of this mound, *without exposing the roots*, (which was the practice of some of my neighbors who thus lost their trees by freezing the roots to kill the worms.)

After the removal of the mound, and before the second application of a wheelbarrow load of cow-pound manure, a shovelful of ashes should be applied as near the stem of the tree as possible. I prefer the animal ash which is called black residuum.*

Although our clay soils are not deficient in potash—and the green sand marl crops out from beneath them—the potash of this ash may be necessary for the peach, but the fact that it does not pay on the sandy soils of Sussex which are deficient in potash, compelled me to attribute its wonderful influence upon our corn, (and especially in the basins where the corn invariably aborted without it,) to the destruction of those parasites or worms which utterly destroy it where it should be most productive. Sifted coal ashes mixed with about one-tenth of sulphate of potash, or with wood ash, may be substituted, but the "kainit," or native muriate of potash circulates too freely with the sap and injures the peach precisely as it ruins the beet in relation to sugar.

The effect of the late frosts on all other orchards *not thus manured and managed*, is demonstrated *now* to have been due to above treatment, which insured to each tree a wonderful vitality; delayed the blossoms systematically, and invigorated the tree only *when* it demanded nourishment during fruiting period. Upon the removal of the mound in the autumn, the lateral roots were found returning toward the stem of the tree, attracted by the nourishment in that direction. Ten acres faithfully managed as above, will pay better than one hundred acres without it, though cultivated by the *most expert farmer*. Apart from the fact that the amount of manure *annually* required makes a larger area impracticable, and the risk of a *series* of severe frosts is ruinous when more than ten acres are thus manured. I was shown an orchard in Queen Anne's county, Md., six or seven years old, which had never borne a crop; also, a ten-acre lot of trees without any cherries, though cherries were abundent above on this Peninsula, where the blossoms were delayed until after the severe frost which utterly ruined them in Queen Anne's county

A net income of $1,000 was allowed as exempt from taxation, but the cost of the trees was not deducted from this, consequently the *published* "income tax" which I paid *many years* must demonstrate the ECONOMY of the lavish expenditure as to manure and labor, especially as the whole farm never averaged $500 in the hands of the most expert farmers in Delaware in all previous years.

Thirteen thousand baskets was my largest shipment during any one year, but no other orchard exceeded eleven from this wharf before, (or since perhaps). During one year my peaches averaged 72 cents while another reported 36 cents average. This may have resulted from the more careful sorting, and their sale in New York where one choice crate brought six cents each peach.

Delaware. D. STEWART.

*NOTE.—The spent or residual ash of the Prussian blue factory is produced by heating animal refuse, such as horns and hoofs with potash in a close vessel. The carbonaceous ash is leached, but still retains about 12 per cent. of agricultural salts. I introduced this here, after using several hundred tons, and demonstrating that the average of any corn crop is increased 36 per cent. by applying about a gill to each hill after planting.

The American Farmer

"O FORTUNATOS NIMIUM SUA SI BONA NORINT AGRICOLAS." *Virg.*

PUBLISHED ON THE 1ST AND 15TH OF EVERY MONTH,

By SAMUEL SANDS AND SON,

At No. 128 West Baltimore Street,

(Sign of the Golden Plow,)

BALTIMORE, MD.

WILLIAM B. SANDS, Proprietor.

SAMUEL SANDS, WM. B. SANDS, } Editors and Publishers.

DR. THOMAS POLLARD, Associate Editor.

Richmond, Va., Office, 619 W. Main St.

SUBSCRIPTION:

$1.50 a year, in advance. Clubs of five or more will be supplied at $1 each.

ADVERTISING RATES:

	1 Time.	1 Mo.	2 Mo.	3 Mo.	6 Mo.	12 Mo.
1 Inch 12 lines	$2.25	$3.25	$4.00	$5.50	$9.00	$15.00

Liberal reductions will be made on larger advertisements. Advertisements to remain on outside page subject to special contract. Transient Advertisements payable in advance—all others quarterly. Advertisements should reach us by the 12th and 27th of the month, to secure insertion in the succeeding issue.

*** Subscribers who have minerals, ores, marls, fertilizing materials, or other substances, will be advised through our pages, by competent chemists, as to their composition, uses and value, by forwarding specimens to this office, *expressage or postage prepaid*. Questions as to application of chemical science to the practical arts will also be answered.

*** Persons desiring information or advice on diseases or injuries of domestic animals, will receive replies from a competent veterinary surgeon, by giving a plain statement of the symptoms, etc.

☞ At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen s Association.
Maryland State Grange, P. of H.
Agricultural Society of Baltimore Co.

BALTIMORE, FEBRUARY 1, 1884.

Clubs and Renewals.

Very gratifying receipts of lists of names, old and new, have marked the first month of the New Year, and our acknowledgments are due and tendered our friends for their favors. Such as have not yet been able to forward their customary clubs—and the weather and roads have, as we hear from many sources, been exceedingly unpropitious for such efforts—we suggest will find ample opportunity during the present month, and we trust that by their partiality they will largely increase our circulation. The renewal of single subscriptions is always in order, and it is desirable and convenient to attend to it promptly before it escapes attention, as these small matters are apt to do. Will it be thought obtrusive if we should add there is scarce a single subscriber who in remitting could not transmit at least one new name with his own.

OUR PREMIUMS. — These will give some remuneration to those who will interest themselves to secure subscribers, and in every rural neighborhood some active person might gain some of the articles offered by a little exertion.

DR. B. PURYEAR, Professor of Chemistry and Chairman of the Faculty, in Richmond (Va.) College, begins in this issue of THE AMERICAN FARMER, a series of articles which we are confident will be read with pleasure and profit. Whilst he will treat the staple crops and deal with the practical matters of the farm, his illustrations of the application of scientific principles to agriculture promise to be lucid and instructive. Dr. P. is a writer of great force and clearness, a farmer engaged daily in the operations of a well cultivated farm, and with a happy facility for making clear points difficult to readers ignorant of technical terms. We welcome him warmly to our pages.

The Proposed Agricultural Experiment Station.

On Thursday, February 7th, the special order of the day in the House of Delegates of Maryland is the consideration of the bill for the establishment on the State's property at Pikesville, of an Agricultural Experiment Station.

The bill is one which has been carefully drawn, after mature deliberation and consultation with the best authorities, including eminent men at the head of similar institutions in other States, which have demonstrated by their actual work their usefulness and popularity.

Provisions as well fortified as practicable place the station beyond political influence, secure the services of officers of the highest skill and disinterestedness, and give assurance of perfect fairness and equity in the performance of its functions when diverse interests appear.

Maryland ought not to be backward in this work of promoting the enlightenment and progress of the agricultural community. Other States, no more advanced than she, have established and successfully conducted these stations to the general satisfaction and profit of their farmers, and wherever they have been set in operation, their operations, activity and endowments have soon been enlarged. Connecticut, New York, New Jersey, Ohio, Massachusetts and North Carolina have all shown their disposition to advance the farming interests in this line of work, which seems the one, under the conditions of the age, giving best returns and most satisfaction for the skill and science engaged in investigation and experiment.

Maryland is no less an agricultural state than those named. The State does nothing for her farmers as a class. There is an opportunity now offered to put in motion an institution adapted to their benefit, but which will enure to the advantage of the entire community. Whilst the proposed law may not be perfect, it represents the experience, skill and labor of a number of able, devoted and capable men who have investigated the working of such institutions the world over.

We trust the farmers of Maryland will appeal to their representatives in the Legislature by letter and word of mouth to give their support to this measure, confident it will be found, if its enactment can be secured, of the highest advantage to them as a class.

Preparations for the Harvest of '84.

The Champion Harvester manufacturers take time by the forelock in the preparations to supply the demands for their machines for the coming harvest, as will be seen by notices elsewhere of their doings. Messrs. L. H. Lee & Bro., their general agents in Baltimore, have placed in their warehouse, No. 89 Sharp Street, a gas engine, which puts in motion sample machines of all the patterns they are offering this year, and farmers interested are invited to call and inspect them. It is claimed that the Light New Binder, now offered, includes many and important improvements, fitting it better than ever before for the work it is designed to do, one important and labor saving attachment being the new Sheaf Carrier, whilst others add to the durability of the machine, though its weight and draft are diminished.

Joshua Thomas and Brother.

Any of our readers in need of agricultural or mill machinery, engines, harvesting machines, drills, plows, rakes, &c., are referred to the advertisement of this firm, one for which we bespeak liberal patronage, as deserving and reliable. Their line of goods comprises a number of specialties of the best reputation and any inquiries will be promptly and satisfactorily replied to by them.

Mr. Halliday's New Enterprise.

It will be seen by his advertisement elsewhere, that Mr. Robert J. Halliday, long established as a nurseryman, florist and seedsman, has greatly enlarged his scope of operations, and in his new four story warehouse, No. 238 W. Baltimore Street, will carry on a general seed and plant business, where ALL SUPPLIES FOR THE GARDEN may be found, including seeds, plants, tools, implements and every other horticultural requirement. Mr. Halliday's experience will doubtless command success, and his enterprise in locating his new and attractively fitted up warehouse in the very centre of the business part of the city, on its main thoroughfare, deserves commendation.

FARMERS' CONVENTION OF CENTRAL MARYLAND.—Under this title, it is proposed to hold in Baltimore City on February 23d, a meeting of farmers, individuals and delegates from the agricultural societies and other organizations of Baltimore, Harford, Anne Arundel and Howard Counties. Addresses will be delivered and papers read on subjects of general interest by gentlemen of scientific attainments and practical skill, and such matters as are of concern to the farming community will be discussed. The Harford County Society has agreed to join with that of Baltimore County in convening the meeting, and invitations have been extended to the various clubs and granges of the counties named. Full particulars will be announced hereafter.

Major Luther Giddings' Farm.

It will be seen by an advertisement on another page that the beautiful and productive farm of the late Major Giddings, near Annapolis, Md., is offered for sale by the attorney for his heirs. In beauty of situation, accessibility to good markets, neat improvements and other attractions, it would be difficult for it to be surpassed. Its vineyards have a wide reputation, its dairy is a source of unfailing revenue, and the condition of the land has been well kept up. To a purchaser desiring a place highly improved, convenient to schools, churches, and with exceptional social advantages in its proximity to the State Capital and the U. S. Naval Academy, it offers an opportunity not often found.

AGRICULTURE IN THE SOUTH.

Commercial Fertilizers, and will they Pay?

BY TH. POLLARD,
[Ex-Commissioner of Agriculture of Virginia.]

We resume this subject by remarking that nature has provided for the three great ingredients of plant food; that however of phosphoric acid is much more artificial than that of nitrogen and potash. We may supply nitrogen by clover and peas, and other green crops, and the rains bring down much of it from the air, and deep down in the soil there is generally some supply of nitrogen. All fresh lands contain a good quantity of nitrogen and potash, and, as before remarked, there is a great deal of land, particularly clay soils, which have potash enough to last for years. But when phosphoric acid becomes exhausted, as it does by repeated cultivation, there is no resource but to apply it artificially in the form of bone and of the phosphate deposits in the different countries of the globe, which a kind Providence, for our good, caused to be deposited in almost every country. The supply of animal bone would evidently be entirely insufficient to furnish the demand for phosphoric acid (or phosphate of lime). The sources of phosphoric acid are raw bone, bone ash, bone black, and the phosphates of different countries of Europe, that of Navassa, and of South Carolina in the United States. The bone ash is prepared from the bones of slaughtered animals generally by burning in the open air, by which the ammonia, carbon, and other organic matters are driven off. This material is mostly brought from La Platte district in South America. Bone black or animal charcoal is made by calcination, which drives off the volatile matter and leaves the carbon. It is ground, and used by sugar refiners for bleaching their sugars. After being thus used it is bought up to make superphosphates by the addition of sulphuric acid. It retains most of the phosphate of lime, besides organic matters acquired, especially when used with blood. The phosphate of lime in this and the bone ash is partly assimilable by plants. The best specimens of natural phosphates are obtained in Spain and Bavaria, though there are fine beds of it in Wales and other countries in Europe. In America, it is extensively mined, in South Carolina, and in Navassa, near Hayti in the West Indies.

Prof. Pendleton, of Georgia, gives the following, that some of these substances contain of phosphate lime, viz.: Bone ash of South America, 70.31 per cent.; bone black, 58.10 per cent.; Sombrero guano 67.06 per cent.; Cambridge Coprolites 57.09 per cent.; South Carolina phosphates 53.21 per cent. (analyzed by T. S. Hunt); that from Norway 90.74 per cent. The close construction of this latter, preventing it being readily converted into superphosphate, and its limited supply, is a bar to its extensive use. The Coprolites (which are the contents of the intestines of antediluvian animals converted into phosphate of lime) Sombrero and Navassa guanos do not make as good superphosphates as the South Carolina phosphates on account of their containing impurities, such as oxide of iron, alumina, and carbonate of lime. The South Carolina rocks are ground without much difficulty, and are now ground to a great degree of fineness by recently invented machinery; they have few objectionable impurities, and are easily converted into superphosphates by sulphuric acid, and they are in much demand, millions being invested in the industry, and the business is steadily increasing. Some years since we hoped we had found phosphate of lime in New Kent county, Virginia, in a large deposit of marl. Specimens were obtained containing good percentages of phosphate of lime, but on thorough examination by Prof. Sheppard, of South Carolina, and other chemists, it was found this deposit was in a pocket of not large extent, probably caused by an unusual accumulation of bone at that point.

While Commissioner of Agriculture of Virginia, Prof. Sheppard kindly presented the mineral cabinet I was forming, with specimens he had personally obtained from the different countries in Europe, viz.: Apatite from Norway with 85 to 90 per cent. of phosphate of lime; Bordeaux phosphate from France, 70 per cent.; French coprolite, Bellegrade, France; Lahn phosphate, Germany; Esmeraldo, Caceres, Spain, 60 to 75 per cent.; Cambridge coprolites, England; French coprolites, Adennes, France; phosphate from Logrosan, Spain, and from Kursk in Russia.

The prices of these different articles vary much. Bone black, particularly with the

demand for refining sugar, ranging from $15 to $30 per ton in some instances. South Carolina phosphate, which is our cheapest and most certain source of phosphate lime, can be bought from the grinders at $12 to $15 per ton, purely ground, and in the raw unground state at $8 to $10 per ton. It can be bought in Richmond, *very fine*, at $18 per ton. The ground bone costs $40 or very near to it, for a good article. This contains 4 to 5 per cent. of ammonia, but this is the dearest fertilizer a farmer can buy nitrogen, 14 parts of which is equal to 17 of ammonia. Nitrogen ranges in price from 15 to 24 cents per lb. in accordance with the source from which it is derived, putting it at 20 cents per lb., and the percentage in ground bone is worth only about $1. So we see how dear ground bone is in comparison with the South Carolina phosphate. We think the farmers can scarcely afford to buy ground bone or dissolved bone, which really is still dearer. Of late years, there has been much discussion about the relative value of ground and dissolved bone, and likewise as regards the phosphates in these conditions. We think there can be no doubt that the decision should be in favor of the ground condition. By dissolving nearly one half the phosphate of lime is lost, being replaced by sulphate of lime, (gypsum) at least one-third,* and other compounds. The gypsum acts on some soils, and on others not, but if it acted on all, the price in this combination would be too high to pay. Thus the price of the phosphate of lime in the superphosphate, (dissolved) is at least doubled, for we must add the cost of the sulphuric acid in the dissolving, and the manipulation. Dr. Elizey, though he does not give the computation, puts the relative cost of the dissolved phosphates to the ground, as much higher. The only advantage of the dissolved is that its action is much more rapid than that ground, and may be used in spring, while the ground must be applied in the fall to get the best effects. Thus applied on wheat, along with kainit (German potash salts) which adds to its solubility, it is found to be a very efficient, as well as cheap fertilizer. It comes in to play more in the latter stages of the growth of wheat, makes the grain full and plump, and the straw stiff.

It is more permanent in its effects than the dissolved. From its less rapid appropriation by the plant it is well to apply more per acre, and we can afford to do this, as its price relatively to the dissolved, is much less. We would advise farmers where they can spare the money, not to use less than 300 lbs. per acre, and along with it 150 lbs. of kainit. It is found that the kainit has a solvent action on the phosphate, and there is not much land which does not require potash, and not many crops which are not benefited by it. This combination we think, all things considered, is the best for wheat, used when the wheat is sown. Of late years it has been tested by many farmers, and the verdict is strongly in its favor. The late Dr. St. Julien Ravenel, of South Carolina, used it for a considerable number of years on his farm on the South Carolina coast (light land we suppose) and esteemed it very highly, calling it his "ash element." He told the writer that it would produce a good growth of peas on almost any land; that he had used it on peas the previous season; that the growth was so great he had to burn them off to fallow for wheat, losing only the ammonia in the vines, retaining that in the roots, and all the mineral matter, and at the time of our conversation (either 1879 or 1880) he was harvesting his wheat, and confidently expected to realize 35 bushels per acre. It is an important matter to have some preparation, which will produce a good growth of peas on poor land, for then we can probably get a paying crop of wheat, and a stand of clover, and the grasses. If once using it does not realize this result, then let the trial be repeated, with probably rather less of the fertilizer. Ordinarily, we think, 200 lbs. of the fine ground phosphate, and 100 lbs. kainit will suffice, though rather more would be better. This would not cost more than $3.50 to $4 per acre. The phosphates are all important to the wheat crop, and indeed to all. In using the above preparation on wheat, if there is reason to believe that there is deficiency of ammonia in the land from want of vegetable matter and hard cropping, then we would apply nitrate soda in the spring, this is a good source of rapidly acting ammonia. The above application of phosphates and kainit is the best fertilizer for fruit trees.

*Prof. Pendleton says 6-10 or 3-5.

The Grange.

National Lecturer's Communication.

[Subject for Subordinate Granges for February.]

Question—What are the causes of failures in Subordinate Granges? Why do they become dormant?

Suggestions—Causes that contribute largely to failures and dormancy are local, and are held within the grasp of members in their respective localities, and they alone can control them for good or evil. If applied to the former, danger of failure is removed and success assured, but if applied to the latter then dormancy is sure to follow. The following are common causes that lead to failure and dormancy:

1. Officers failing in attendance and in prompt discharge of duty.

2. Master not following rules and regulations and seeking to make Grange meetings interesting and profitable.

3. Lecturers too often absent themselves from stated meetings, and when present too often set with sealed lips and tongue tied, while members are waiting patiently for the introduction of practical questions from which useful information might be gathered.

4. Members depend too much upon officers, expecting them to do it all, while they neglect their own duty, both in and out of the Grange.

These are the causes that lead to dormancy, and especially the second and third causes named, for no Grange can long survive where Master or Lecturer neglect their duty at Grange meetings.

The only way to secure successful results and prevent dormancy, is for officers and members all to do their full duty, attend every meeting and work harmoniously together, and make Grange meetings and Grange work interesting and profitable. Then there will be no danger of failure.

Maryland Granges—Election of Officers.

DARNESTOWN, No. 33.—M., L. A. Darby; Sec., E. L. Tschiffely.

ROCKVILLE, No. 12.—M., John E. Willson; Sec., E. W. Horner.

DAMASCUS, No. 80.—M., C. C. Lawson; O., J. F. Burdett; L., C. J. Burdett; St., S. Kindley; A. S., W. W. Burdett; C., W. Boyer; T., E. Brandenburg; Sec., A. L. Burdett; G. K., J. E. Warfield; P., A. E. Walker; F., Mary Warfield; C., M. B. Purdum; L. A. S., M. L. Purdum.

We heartily endorse the ideas conveyed in the letter from Dayton, No. 176. For we think it would be very beneficial to the Order, if the secretary of each grange in the State would send to you the progress of the Order in their cummunity.

A. L. B., Sr.

NEW WINDSOR, No. 146.—M., S. S. Ecker; O., A. A. Roop; L., Thos. F. Shepperd; St., Wm. T. Smith; A. S., John Roop; C., L. N. Snader; T., Gustavus Barnes; Sec., Joseph A. Stouffer; G. K., E. Ecker; P., Miss Lizzie Shepperd; C., Mrs. S. S. Ecker; F., Miss Maggie Poole; L. A. S., Miss Emma Snader.

LIMESTONE VALLEY, No. 70.—Ferdinand C. Pue, M.; John S. Watkins, O.; Wm. Clark Sr., S.; James T. Clark, A. S.; Andrew Adams, L.; Lloyd W. Linthicum, C.; Miss Helen Harlan, T.; James Harlan, Sec.; Covington B. Zepp, G. K.; Mrs. H. T. Ridgely, P., Mrs. Jane Harban, C.; Mrs. W. H. Hardy, F.; Mrs. Kate Watkins, L. A. S.

JEFFERSON, No. 167.—G. T. Whip, M.; Jno. H. Culler, O.; W. H. Lakin, L.; T. S. Thrasher, S.; C. R. Horine, A. S.; Jno. W. Long, C.; D. M. Culler, T.; John S. Lakin, Sy.; Joseph Souder, A. S.; M. F. Culler, G. K.; Mrs. J. H. Culler, C.; Mrs. C. R. Horine, P.; Mrs. D. M. Culler, F.

GLENWOOD No. 41.—W. C. Musgrove, M.; L. I. G. Owings, O.; J. E. Buck, L.; R. Dorsey, of C., S.; S. Banks, A. S.; Wm. A. Ridgley, C.; D. Clark, T.; G. D. Clark, Sy.; D. P. Gaither, G. K.; Sister H. Musgrove, C.; Sister A. L. Clark, F.; Sister J. E. Buck, P.; Sister C. B. Green, L. A. S.

LIBERTY GROVE, No. 54—Wm. Rich, M.; L. H. Duvall, O.; Luther Brashears, L.; J. M. Brian, S.; J. F. Phair, A. S.; Sarah Nuttle, C.; James Nuttle, T.; Columbus Brashears, Sy.; F. M. Turner, G. K.; Mrs. Wm. Rich, C.; M. J. Duvall, F.; Alice Marlow, P.; Emma Miller, L. A. S.

Home Department.

RECREATIONS OF A COUNTRY HOUSEKEEPER—No. 3.

To Look Before and After.

As soon as Mrs. Mackey understood the meaning of our move, she insisted it should be carried out before she would agree to give us the benefit of her evening talk.

We all considered it an admirable feature—our Sisters' Session—this being asked by the Mistress of the house to walk around and inspect her different departments. We thought it would stimulate the lazy housekeeper and encourage the industrious, and were truly glad that Sister Ingleside had initiated it without a hint from the rest of us. Little Mrs. Pine looked positively alarmed at this new fashion of taking out a search warrant without due process of law. Dolly caught the troubled look in her face and said, sympathetically, "Hope you'll serve the notice on us in due time, so we can set our house in order when you come around in a posse to inspect *our* premises. Don't we, Sister Pine?"

We made a pleasant little tour of inspection, by invitation, not only of the kitchen, but of the hennery, and the new combination dairy, and interchanged opinions freely on the condition of each "for the moral effect," as Sister Mackey said, before we returned to the sitting room, and she could deliver her little address.

"Pass her up quickly! like she was a bride," laughed Daisy, "for fear she'll get nervous and go back on her resolution."

"Never you fear, my dearie," our speaker returned in most composed style, "I really felt quite nervous, for fear I should break my leg or arm or something before I got here. My whole heart is in this thing. I believe it to be a veritable move of progress. 'Wait for the wagon' has been our old sing song long enough. Now we must speak to one another that we go forward."

"Speak, spoke," laughed Dolly, dimpling with her irrepressible love of-fun-making, "who ever speaks here, is to put a *spoke* in our wheel, is that it?"

"Now, my dear," said Mrs. Ingleside, with intense earnestness, "We are serious about this thing and want no flibberty-gibbety nonsense here; not a bit of it."

"No," continued presiding sister, Deborah Fry, "and we will all keep still, now, and hear what Sister Mackey has to say."

"O, I have only enlarged a little on what I was talking about the other day," put in Mrs. Mackey, "you may be sure, my very first word is bound to be

A WORD FOR THE HOUSE MOTHER.

If we go observingly from house to house among representative homes we will almost always find that some member of the family is being sacrificed to the comfort and convenience of the others. And within doors it is oftener than not, as most of us know, the dear old *house-mother* that is the devoted member. We think this all natural enough, and so it may be, since the law of sacrifice is the supreme law that underlies all life, natural and spiritual, it might be unreasonable to expect THE HOME, the very fountain head of human existence, to be exempt from its requirements. And yet, is not the action of the law in this case rendered more extreme, many times, than is necessary, by the unthinking and unsympathetic readiness with which we "offer up" our family victim?

And is it not a fact, that as a class in our communities, our housewives are ungenerously "put upon" in many ways—have rarely enongh thought taken for them, or enjoy that appreciative sympathy that ought to be theirs by right of their office, even independently of personal qualifications? Do not most men regard or disregard them with the sang-froid that Rosetti quaintly says the child has toward the dead people—their turn to die and his to live? 'Tis woman's turn to keep the house and man's turn to live in it. Of course, this is all true enough, and yet it is truth that might be made more tender, or far less caustic many times if only a little more soothing sympathy were worked in to soften the application.

Many a Tobias (not apocryphal) says "My wife Anna did take Woman's work to do," and says it with that off-hand unconcern that shows how little he is aware of the patience of hope and labor of love, besides the time and tenderness and energy and earnestness and all sort of costly material that has to go to the proper make-up of that curious *multum in parvo*, known as woman's work, specially the house-mother's work.

There is probably no blessing after that of the air we breath and the water we drink and the good health we live in, that is so invariably enjoyed and so intermittently noticed; in other words, so taken *as a matter of course*, and of right, as that of a well-appointed and well kept home.

Indeed, it would seem sometimes as if only the negative of our fireside picture is appreciated. Let the course of good order get a little out of sort,—the domestic rolling stock jar or stop in its even run of comfortable routine—then we notice things, just as we do when our fine Pullman jumps the track, or sewer gas vitiates our air, or vitriol, or some coppery crank turns our water away from its fresh wholesomeness.

Now it is this want of sympathy, this cruel indifference—call it by no tenderer name—that so often poisons the sweet atmosphere of home, and fills many a loving woman's life with bitterness of unshed tears, and this chronic state of take-for-grantedness is often indulged in by the amiable, go-easy members of the family who never dream they are giving pain; have not the least intention of doing the hard or the harsh. But they *are* doing it, nevertheless. And the evil is not at all the less real and cruel for being "wrought by want of thought."—A world of anguish is in that WANT—and yet, what a world of atoms it is, made up of such tiny intangibles. Just a touch more of recognition in the foot that walks over the swept carpet, or of acknowledgement in the eye that glances down the daintily decorated wall or table, what a tonic it takes to the little body that is very tired, it may be, of sweeping and of decorating.

Company notices her efforts. But this is not the notice she needs—very pleasant in its way and exhilarating,—but it is the glass of sparkling champagne and the dose of

laughing oxyide, not the necessary every-day draught from the old home spring, nor the fresh, skyey oxygen let in regularly to the close, oppressive sleeping room. A little thought of tender attention, even if it is an after-thought, is ever so grateful sometimes and helpful, (specially when there has been no fore-thought) and never comes too late to mend matters. But if we could only "Look before and after," not, as the poet adds,

"And pine for what is not,"

but just to see what *is*—to look matters square in the face, and then to turn them about and look them square in the back, with a view to giving the helping hand when needed, what a double comfort it would be to the dear little overtaxed *housfrau*. In certain respects men may be said to look "before" in small domestic matters, but the "after" must take care of itself (if mother or wife does not take care of it). The good dinner, for instance, is a superior interest. The bringing forward and the serving; but the taking back and the unserving—who concerns himself in the very least thought about that *last course, of course*? Even when there is no other server around, as so painfully often happens nowadays, but only weary wife, or mother, or daughter!

And to dress for dinner or for business is a perfectly manly exercise. But the room "I left behind me,"—who ever dreams of taking a thought about its disordered toilet? And yet, it is surely quite as dignified and man-befitting to hang a coat in a wardrobe as to throw it down for some one else to hang up, nor no more beneath a man's dignity to put a hat on the rack when he comes in, than the hat on his head when he goes out; nor to gather up the newspapers he has scattered about him, than to tear off a margin, light his pipe with it, and walk away; and yet, the bare idea of associating such little domestic matters with the men of the house seems laughable. And why? Not because those things are small—nothing is small that allows a brave, chivalrous man to render help to one who is weaker than himself, and such a motive can always make the most servile action regal—but simply because it is unusual, unthought of, and every way out of the line of our domestic routine. And yet it is possible that some thoughtful little ways, like these, might sometimes give a weary woman more comfort and pleasure, even in the house of the empty purse, than a mere outlay of money untouched by sympathy and appreciation. The truth is, we grow in our physical and moral and social nature from the lower to the higher life. Civilization is, after all, only a flourishing branch grafted into the wild olive stock, and if we inquire curiously into this feeling of dignity and indifference to the overtaxed mother's work, we will be quite shocked to find how much of the root of the matter lies under the old barbaric notions that women are the d mestic burden bearers. Are men, then, in addition to all they have to do in life, to busy themselves about the household occupations in order to relieve the women of the work that naturally falls to them? Not at all; not at all. Tender, supporting and loving ap preciation is what the busy house-mother needs.

Home is nature's co-operative association, and none but those who try the experiment know how far these little mutual considerations and interchanges of love offices (always the mother's) help to pour in the lubricating oil, and to tighten up the loose screw and so to keep the whole domestic machinery in good running order."

SISTER TARPLEY.

FOR a nice and economical pudding take thin slices of stale bread, butter them on both sides, cover the bottom of a pudding dish with them, and spread jam of any kind over them; then another layer, and so on until the dish is full. Have a thin layer of buttered bread on the top. Serve hot, with cream or with a custard made of a pint of milk, one cup of sugar, and two eggs.

Hygiene.

Croup.

Croup is a congestion of blood in the arteries of the windpipe congested to such an extent that the more watery portions of the blood exude and spread and thicken, until the windpipe is so nearly closed that breathing is difficult, and as the filling-up increases and the breathing becomes more labored, a kind of spasmodic contraction of the top of the windpipe takes place, and the child is dead.

Croup is the result of cold, especially if connected with damp clothing or wet stockings. No mother should ever put her child, under seven years, to bed without feeling the feet, and if they are not warm by all means warm them, as it may end in croup before morning.

Being out of doors after sundown from November to May is a very frequent cause of croup in small children; in playing about their feet are apt to get wet, or they get over-excited in their little play, are overheated, and are very much inclined to stand in the wind, or at a corner on damp ground, or sit on a cold stone.

Croup usually comes on with a slight increase in the frequency of breathing, about sundown or bedtime. The next morning it seems to be better, and the mother is hopeful; but at night it is worse, and the third night or sooner it is the regular croup; the child is restless, uneasy, it breathes hard and fast, the chest heaves, there is a kind of wheezing, barking, suppressed cough, which does not seem to relieve.

If mothers would apply remedies the first night, croup is as easily cured as a common cold, when taken in time. The instant croupy threatenings are observed the child should be kept indoors; should eat very light food indeed, and not much of that, until the symptoms have abated. Hydropathists invest the throat immediately with cloths wet with water, very cold, ice-cold if possible, but not so as to dribble about; the wet cloth should be covered with a dry flannel one. These cloths should be renewed every two to ten minutes according to the violence of the symptoms, to be continued, by all means, until the breathing is comfortably easy.

If there is not much fever, or if the skin is dry, put the child into a tepid bath of seventy-five degrees, and then well wrap up in a blanket until perspiration takes place. But if there is much fever and a hot skin use the wet pack sheet and renew until the fever abates. The bowels should be emptied at once with a warm water enema. By all possible means keep the feet and hands warm. If there is no expectoration, and the child seems to be almost suffocating, give warm water copiously, until the use of a feather to tickle the throat induces vomiting. It is sometimes wonderful to see the good effects of this warm water vomiting in cases of croup in children.

Some physicians consider nauseating remedies indispensable. Mix half a teaspoon each of powered alum and ipecac in half a glass of tepid water, and give it as quickly as possible. If it does not cause the child to vomit in ten minutes repeat the dose, with a teacup of warm water every five minutes, until a feather or the finger in the throat produces vomiting.—*From Dr. Hall's Health at Home.*

ALTHOUGH it is convenient to have the tea-kettle on the stove at all times, with a supply of boiling water in it, still, unless cooking is going on, it is best not to let water continually boil down in the kettle. It is a fact that this harmless article of stove furniture may become a source of disease in consequence of the sediment which forms in the bottom and sides, and is dissolved to some extent and mixed with food. It is a common but erroneous notion that the tea-kettle never needs to be thoroughly cleansed. It should be washed as well as any other kettle or dish.

THE ART AMATEUR for February contains a strikingly fine ideal portrait for oil painting, said to greatly resemble the famous American beauty, Miss Chamberlain. Other designs are a child's head, snowballs and hepatica for china painting; doilies and a portfolio cover for embroidery; marigolds for wood-carving, and some charming figures for Valentine cards and sketching on linen. Ulysse Butin, a capital French painter of fishermen, receives biographical notice, and some interesting samples of his work are given. Specially attractive features are the page of "rapid sketches" by the Kit-Kat Club, and the illustrated articles on Alma-Tadema's house and Cincinnati pottery. Montezuma's "Note Book," the musical and dramatic feuilletons and Clarence Cook's criticism of the Thomas B. Clarke pictures are vigorous and entertaining. The practical departments are well filled, and the number fully maintains *The Art Amateur's* high standard of excellence. Price 35 cents; $4 a year. Montague Marks, Publisher, 23 Union Square, New York.

Domestic Recipes.

GERMAN TOASTS.—Beat one egg, add to it one pint of milk, one tablespoonful of sugar, and one of cinnamon. Dip into this, slices of fresh bread, baker's bread is better, as it absorbs the milk more readily, letting them be any length of time that may be convenient. Fry in butter and serve immediately. Handle the slices carefully so they will not break, and serve with sweetened cream. They make a quickly prepared desert when necessary, though they are nicer to stand some time before cooking. Are also an agreeable adjunct to the breakfast table.

A FANCY DISH OF POTATOES for tea is made by pressing mashed potatoes through a colander; let them lie lightly in the dish just as they fall, then set them in the oven to brown. They should be well seasoned with butter, pepper, and salt before they are put through the colander. If you like potatoes prepared in this way, it is a time-saving invention to have a colander made for this purpose. Take an ordinary tin pan, and have holes punched in the bottom of the size you require; it will then take but a few minutes to prepare a large dish.

That Banana Melon.

In looking over the catalogues for 1884, of several seedsmen, I notice the above named melon is described in highly spiced language, as a new (!!) variety, of excellent quality, etc., with a plenty of other choice *word* condiments to induce the reader, if he is fond of melons of the canteleupe class, to pay the fifteen cents asked for a small packet of seed. Now I *happen* to know something of the "Banana Melon," as a friend in the "Commission business" in Philadelphia sent me a small packet of seed in 1881, only claiming for it extraordinary length as its chief merit. Indeed my friend did not praise it enough to induce me to plant the seed; in 1882 another packet of seed arrived from same source, these I planted, and gave them good attention, had an abundance of melons of most remarkable length, the largest being 32 inches, smooth skin, the color of which when ripe, reminded one more of a seed cucumber than anything else. As to the quality, that was passed upon by several different committees of unquestionable competency, and in every case this wonderful *new* Banana Melon (!!!) was turned down as second class. I didn't grow the banana in 1883, so you see, Mr. Editor, here is one instance where an "infant wonder" of the seedsmen has "died a bornin'" on the

EASTERN SHORE.

THE DUTCH FRIESIAN ASSOCIATION of America, of which Dr. F. W. Patterson, of Baltimore Co., Md., is president, will hold its 7th annual meeting at Utica, N.Y. on Feb 6.

The police force of Baltimore, in emergency and discipline are second to none in the land. Whether that is due to the fact of so many of them using J. M. Laroque's Anti-Bilious Bitters, we will not say, but they themselves (or rather a large number of them) do say that it is the best medicine in the world, keeping the system in that healthy condition which fits them so well for duty. If you feel bad, try it. All druggists sell it. 25 cents a paper, or $1 a bottle. W. E. Thornton, proprietor, Baltimore, Md.

Columbus (Ohio) Dispatch.
December 20,' 83.

To-day sixty Champion Binder Reaper and Mowers were delivered to the farmers who had purchased them for 1884 harvest. Notwithstanding the fact that the Champion manufactories are located near by, the farmers make early orders to make sure of getting the Champion. Thermometer at zero; snow twenty inches deep.

Weekly Reporter, Washington, Pa.
January 29, 1884.

A Novel Sight—54 farmers' sleds were in line, each loaded with a Champion Binder. The procession moved from B. & C. Depot, and passed up Main street. This speaks volumes for the excellence of Champion Harvesting Machines.

Mount Pleasant, Pa.
January 3, 1884.

Fifty-seven farmers have given me their orders for the new Champion Light Binder, and I have twenty-one orders for Champion Reapers and Mowers.

Yours truly, ADAM RUMBAUGH.

Springfield (Ohio) Republic.
December 24, 1883.

The three concerns manufacturing the Champion Harvesting Machines, namely: the Champion Machine Co., Whitely, Fassler & Kelley, and Warder, Bushnell & Glessner, all located in Springfield, Ohio, will build for the harvest of 1884, in the aggregate, 73,000 machines, including single mowers, single reapers, combined reapers and mowers, and harvesters and binders.

The aggregate value of 73,000 machines would be about $10,220,000. This is a terrible dose for the croakers, but we take pleasure in administering it.

Columbia Daily Register, Columbia, S. C.,
November 20, 1883.

The exhibit made by L. H. LEE & BRO., of Baltimore, at the State Fair, just closed, of the Champion Harvesting Machines, was perhaps the most complete and extensive in the implement department.

The merits of the Champion Harvesting Machines find full endorsement in the fact that fifty of our best farmers gave their orders for Champion Machines during the three days' exhibition.

We have seen a list published by L. H. Lee & Bro., of about 1500 of Baltimore Co. farmers, who own from one to five Champion Machines each, and have also seen lists of about the same number of farmers of Chester, Lancaster, York, Adams and other counties in Pennsylvania, who are patrons of the Champion, which throws light upon the immense sales of Champion Machines as claimed.—EDS. AMERICAN FARMER.

Baltimore Markets—Feb. 1.

Flour.—Fairly active and firm under a more liberal inquiry, particularly for the medium and lower grades. Quotations are as follows: Howard Street and Western Super, $3.75@3.25; do. Extra, $3.50@4 65; do. family, $4 90@5 75; City Mills Super, $3 75@3.50; do. Extra, $3.75@4 65; do. (Rio Brands) Extra, $5.75@6 00; Baltimore Winter Wheat Patent, $7; do. High-grade Family, $6.50; do. Second grade Extra, $6 25; do. Third-grade Extra, $6; Fine, $3 50; Rye Flour, $3.75@4; Corn Meal ₩ 100 lbs. $1 30; Colbert's Excelsior Graham, $7.

Wheat.—Only small lots of Southern Wheat are offered, and the market is steady under a fair demand for the better grades for millers' use. The business was at $1.15 for mixed, $1.15 for longberry, delivered, and $1.16 for do. on track. The market for Western Wheat ruled quiet and lower, but reacted and closed at a fraction above the lowest prices. The closing quotations were: $1.06@1 06¼ for spot, $1 05¾@1 06¾ for February, $1 07¾@1.07 for March and $1 10¾@$1.10¾ for May.

Corn.—The market for Southern is quiet and steady, with limited offering. White sold at 61@63 cts. for prime, and yellow at 55@57 cts. for damp to fair in car-lots. Western is lower, but more active, closing steady at the decline. The closing quotations were 58¼@58¾ cts. for spot, and 58¼@58¾ cts. for February, and 58¼@59 cts. for March, and 61@61¼ cts. for May.

Oats.—The demand is moderate and the market is quite steady with only fair offerings. We quote Maryland and Pennsylvania at 41@43 cts.; mixed Western, 40@41 cts.; white do., 42@43 cts.

Rye.—The offering is moderate but the demand is slow and the market is quiet and steady. Good to choice samples are quoted nominally at 67@69¼ cts. ₩ bu hel.

Hay and Straw.—Hay is firm and higher under an active demand for choice grades. We quote: Cicil-county Timothy, $16@18; Maryland and Penn-

sylvania Timothy, $14@16; mixed, 10@13; Clover, $9@10; Western $11@16 ₮ ton for common to choice. Straw is quiet and steady at $7@8 for wheat, $10@11 for oat, 13@14 for long rye and $10@11 for short do.

Mill Feed.—The offering of Western is limited to lots from store, and the market is firmer at $20@21 ₮ ton, as to weight. City Mills stock is steady at $21@22

Cotton.—There is a fair inquiry, but holders are not disposed to accept buyers' views, and the market though quiet is firm. We quote as follows: Middling at 10¼@10¾ cts; low middling at 10@10¼ cts., and ordinary at 9¼ cts.

Provisions.—Speculation continues irregular and round lots are easy. Locally there is a fair order trade at unchanged prices. Packed lots from store are quoted as follows: Bulk shoulders, 7¾ cts; clear-rib sides, 9¾ cts.; bacon shoulders, 8 cts.; clear-rib sides, 10 cts. Hams, sugar-cured, 14@14¾ cts. Refined Lard, in tierces, 10 cts. Mess Pork, $16 ₮ bbl.

Dressed Hogs.—The demand is less active and the market is quiet, but steady, at $7.25@7.50 ₮ 100 lbs, as to size.

Butter.—Quiet but steady, with moderate demand and light supply of choice table grades. Inferior stock is dull and neglected. We quote prime to Choice New York State at 26@30 cts.; fresh Western packed choice at 20@24; do. good to prime at 16@18; Western rolls at 18@23; and near-by receipts at 16@30 cts. ₮ lb.

Eggs.—Dull and lower. Fresh stock is now quoted at 38@40 cts. per dozen, and the tendency is toward lower prices.

Poultry.—Dull and easy, with moderate inquiry. Undrawn stock is selling at 12@13 cts. for Turkeys and 10@11 cts. for Chickens.

Tobacco—*Leaf*—The supply of Maryland crop is very small, and the market is quiet but firm, with a good demand of the open foreign ports. The quality of the receipts is generally very satisfactory. Holders are firm in their views, and the outlook of the business of the approaching season is very encouraging. Ohio air-cured is in good demand, mostly from manufacturers. We quote Maryland inferior frosted, @3; do. sound common, $3.50@5; good common $5.50@6.50, do. Middling, $7@8.50; do. good fine red, $8.50@$11; do. fancy, $12@$14; upper country, $5@$15 do. ground leaves, $3@8. Ohio, inferior to good Common, $4@6; greenish and brown, $5@7.50; do. medium to fine red $7@10; common to medium spangled, $7@10; do. fine spangled and yellow, 11@16; do. air-cured medium to fine $6@14.

Live Stock—*Beef Cattle.*—The retail market has been exceedingly slow, holding on longer than for several weeks past. Wholesale prices were a fraction higher than last week, but in the retail trade the quotations of last Monday were barely maintained by hard holding. The best grades showed little if any change, while in some instances medium and common Cattle were ½@¾c. lower than last week. We quote: Best, $6.87½@6.87½; that generally rated first quality, $5.37½@6.25; medium or good fair quality, $4@5.25; ordinary thin Steers, Oxen and Cows, $3.25@4.75; extreme range of prices, $3.25@6.87½; most of the sales were from $3.87½@6.37½ per 100 lbs.

Swine.—The offerings were 2,300 less than last week, but with some improvement in the quality. Prices have advanced. We quote rough light Hogs at 7¾@8 cts.; butcher grades 8¼@8½ cts. per lb. net, and extra heavy at a shade higher.

Sheep and Lambs—There is some improvement in the quality of the offerings to-day over last week's receipts, there being some very prime Sheep among them. Trade for good Sheep has been quite fair, but common stock is hard to sell. We quote common Sheep at 3¼ cts., and prime 6¼ cts. ₮ lb. Lambs @6¼ cts. ₮ lb

Canned Goods.—The *Grocer and Canner* says: The tone of the market is much improved and an increase in the volume of business is apparent. Packers are in better spirits, and the outlook for trade is encouraging. The inquiry for goods is improved and buyers are looking around, and taking some interest in the general list. Messrs. Thos. J. Meehan & Co. inaugurated the season by their unprecedented sale of 30 000 cases of tomatoes made on private terms which were taken mostly for the West. There has been some operations in Peas and String Beans which are active with a fair demand. Quotations are as follows: Tomatoes, 2 lb. seconds, 65@67½ cts.; do. 3 lb. do., 80@82½ cts.; do. 2 lb. standard, 70@75 cts.; do. 3 lb. do., 85@90 cts.; do gallon, do., $2.65@2.80. Corn, 2 lb. standard, 90@$1; do., 2 lb. extra, $1.05@1.10. Peas, 2 lb., 60 do Marrows seconds, 90@$1; do. do. do. standard, $1.05@1.15; do., do. Early June, $1.10@$1.25; do., do. Small, $1.40@1.50; do., do. Sifted, $1.75@2; do., do. do. extra, $2.

HAND-BOOK Illustrated, containing full descriptions of all the Best Hardy **Ornamental Trees, Shrubs,** *Evergreens, Vines, Paeonies, Phlox, Hardy Plants, etc.* 134 pages, with handsome colored plate. Price **25 cts.** Plain **20 cts.** Send for it.

ELLWANGER & BARRY.

Mt. Hope Nurseries. Rochester, N. Y.

FOR SALE!

The Farm of the late LUTHER GIDDINGS, Esq.

In consequence of the death of the late Luther Giddings, Esq., his valuable Farm near Annapolis, Md., will be sold by his heirs at a figure considerably less than that at which he held it.

The property consists of 205 acres, and will be sold in whole or part.

It lies between the Severn River, a navigable salt-water Creek, and the property of the United States Navy, (the old Strawberry Hill place), its other boundary being a straight line.

It is improved by a large and commodious new frame house, and has several other fine building sites upon it, one, the most beautiful site in the county.

It is planted with a very large number of the best varieties of fruit and grapes.

The late owner was a successful grower of grapes and maker of wines.

The farm is in perfect order and well stocked in every way. Arrangements could be made for the sale of the stock, implements, etc, with the place.

It is only 20 minutes drive from Annapolis, over a good shell road through the Government property, or 25 minutes by going around the head of the College Creek.

The farm is remarkable for its beauty of situation, its perfect condition and fertility of soil.

Besides all necessary and convenient farm buildings in perfect order, there are a Dairyman's and Vine-dresser's cottages on the place.

The Dairy business is in full operation now, and a competent Vine-dresser living on the place can be employed if desired.

A bed of brick-clay on the farm has been and still can be worked to advantage.

Possession can be given immediately.

Apply at the premises, or address or call on

JOHN K. RANDALL, Att'y,

40 St. Paul St., Baltimore Md.

FOR SALE.

A well bred SHORTHORN BULL, Hicks, No. 43047, A. H. B., An Annabella, (milking strain) with Bates and Princess top crosses, has no unfashionable blood; Red Roan, 3-years old, and a fine animal in every way, offered for sale because owner has another bull of nearly the same breeding. Price $150.

DANIEL KING,

Finksburg, Carroll County, Md.

FOR SALE.

A few TRIOS LIGHT BRAHMAS, one and three years old, price $4 50; also, JERSEY BULL CALF, solid color, black points, fine escutcheon; out of Kate of Rhode River 6000. Sired by Carroll 8090.

F. B. STEINER,

Rhode River P O, A. A. Co., Md.

Cut this Out

FAY'S CELEBRATED WATER-PROOF

MANILLA ROOFING

Resembles fine leather; for Roofs, Outside Walls and inside in place of plaster. Very strong and durable. Catalogue with testimonials and samples FREE. Established 1866. W. H. FAY & CO., Camden, N. J.

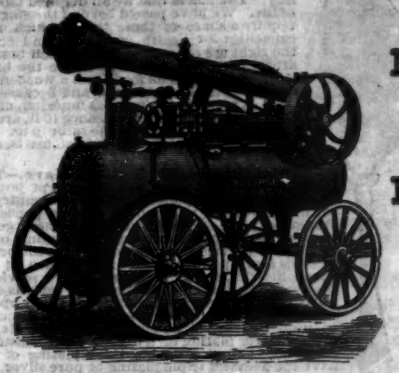
JOSHUA THOMAS & BRO.

STEAM

Agricultural and Mill Machinery

ECLIPSE AGRICULTURAL ENGINE

FIRST PREMIUM WHEREVER EXHIBITED.



Best, Cheapest, and most Economical Engine in the Market.

STEVENS' ENGINE AND THRESHER,

The old standard, and still ahead of all competitors.

KIRBY AND WHEELER MOWERS AND REAPERS,

OSBORNE SELF-BINDING HARVESTER.

A Full Line of Harvesting Machines, adapted to the wants and taste of Farmers any and everywhere.

Union Grain and Fertilizer Drills, Circular Saw Mills Chieftain Horse Rakes, Portable Grist Mills, Millstones, Smut Machines, Bolting Cloths, Champion Force Pump, Mill Picks, Leather and Gum Belting, Cucumber-Wood Pumps, The Watt and Ball Plows, &c., &c.

Prices and Descriptive Circulars on application, and correspondence solicited from all wanting anything in my line.

OFFICE AND WAREHOUSE,

No. 53 Light St., Baltimore, Md.

Big POTATOES

Should you desire to raise a large crop of good Potatoes, use **POWELL'S POTATO PRODUCER.** Write for our new pamphlet, "The Potato," its History, Culture, Prospects and how to cook it.

BROWN CHEMICAL COMPANY,

Sole Proprietors of Powell's Tip Top Bone Fertilizer & Powell's Prepared Chemicals,

16 Light Street, Baltimore, Md.

Everything in the Fertilizer line sold at closest prices.

ALL GARDEN SUPPLIES.

ROB'T J. HALLIDAY,

238 W. BALTIMORE STREET,

BALTIMORE, MD.

My Catalogue for 1884 now ready and mailed free to all applicants. It contains all the new and popular plants for the Garden and Greenhouse; also Vegetable and Flower Seeds, and all garden requisites.

VEGETABLE PLANTS.

I have a large quantity of cold frame plants of the following sorts, and in fine condition, which I will sell in quantities to suit:

Cabbage, Early Jersey Wakefield, per 100 $1.00; per 1000 $8.00

Henderson's Early Summer, per 100 $1.00; per 1000 $8.00

Early Flat Dutch, per 100 $1 00; per 1000 $8.00.

Early Winningstadt, per 100 $1.00; per 1000 $8.00.

Cauliflower, Henderson's Early Snowball, per 100 $2.50; per 1000 $18.00.

I will have Hot-bed plants of all the above sorts ready by the 15th of April, at one half these prices; also, Egg Plants, Tomato, Pepper, and Celery plants, at the proper time, and low rates. Orders booked at any time.

CHARLES E. SANDFORD,

EMMITTSBURG, FREDERICK CO., MD.

Cosy Dell Gardens.

COLD WATCH FREE.

The publishers of the Capitol City Home Guest, the well-known Illustrated Literary and Family Magazine, make the following liberal offer for the New Year: The person telling us the longest verse in the Bible, before March 1st, will receive a **Solid Gold, Lady's Hunting Cased Swiss Watch,** worth $50; If there be more than one correct answer, the second will receive an elegant **Stem-winding Gentleman's Watch;** the third, a key-winding **English Watch.** Each person must send 25 cts. with their answer, for which they will receive three months' subscription to the **Home Guest** a 50 page Illustrated **New Year Book,** a Case of 25 articles that the ladies will appreciate, and paper containing names of winners. Address

Pubs. of HOME GUEST, HARTFORD, CONN.

The Little Detective.

A Scale for Family or Office. Weighs from 1-4 oz. to 25 pounds.

SHOULD BE IN EVERY HOUSE!

We will send one of these useful scales by express, packed in a box, to any one who will send us two old and three new subscribers at $1.50, or a club of four old and four new subscribers at $1.00 each.

WANTED

By about March 1st a situation to manage a large farm, or to take charge of some department of a farming enterprise, by a married man, 35 years of age, a practical farmer and a good accountant, active and energetic. Best of references given. Address P. O. Box 584, Baltimore, Md.

PEACH AND APPLE TREES.

10,000 first-class 2 and 3 year old APPLE TREES, in unbroken block, largely *Smith, Cider* and *Ben Davis,* at $15 per 100.

60,000 PEACH TREES, 4 to 8 feet, $50 per 1,000.

100,000 extra strong 1 and 2 year old ASPARAGUS ROOTS.

All the best STRAWBERRY PLANTS, new and old popular varieties, Manchester, Night's Superb, James Vick, Legal Tender, Big Bob, etc., etc.

Large stock Shade and Ornamental Trees. Send for Catalogue. **S. E. ROGERS & SON,**

Mt. Holly, N. J.

IT PAYS to sell our Hand Rubber Stamps. Samples free. POLJAMBE & Co., Cleveland, O.

$1 WORTH OF CHOICEST SEEDS FREE

To any person sending us 50 cts. for one year's subscription to the **Rural Home,** we will send the **ten packs** of choice Vegetable and Flower seeds named below **free.** We make this offer to induce you to become a regular subscriber to the **Rural Home,** and to test the value of our seeds (specially grown for our use). Following are the seeds we offer: **Golden Dwarf Celery, New Perpetual Lettuce, Vick's Early Watermelon, Red Globe Giant Onion, American Wonder Pea, Livingston's New Favorite Tomato, Pansies, mixed; Mignonette, Verbena Montana and Dahlia, Fine mixed varieties.** Will send all flower or all vegetable seeds as you prefer. Seeds warranted true to name, of good quality, and of the growth of 1883. Full directions for cultivating on each and every package. Address,

THE RURAL HOME, Phila., Pa.

A NEW THING Every Farmer will have it. Saves them large sums of money; saves labor; pays a profit; honest business; Agents clear $30 to $50 a week introducing it; no risk to you; terms easy; full satisfaction; a harvest for live men with small capital. Address F. C. BENNER, New Midway, Frederick Co., Md.

Premiums for Subscriptions to the American Farmer for 1884.

OUR TABLE WARE PRESENTS.

JAPANESE PATTERN.

Requirements of Civilized Life.—What are termed the "necessaries of life" are very few. Breadand-water food, salt-sack clothing, and a hovel shelter would serve to keep soul and body together; but they would hardly meet the requirements of comfortable existence in civilized community. The fact is that we all demand more or less of the luxuries of life. We have passed beyond the stage of mere existence and require a share of those things which minister to our various capacities for health, neatness and enjoyment. Indeed it is the right use of these luxuries which best develops in us those attributes which elevate us above the brute creation. Because the brute relishes its food from a wooden trough quite as well as from the best Parian china, and because it enjoys a mud hovel quite as much as the palatial mansion, and the fact that articles of adornment are but a nuisance to it, are not positive proof that such things should be all the same to us. Nor will they convince many people that mere existence is, after all, the best mode of life.

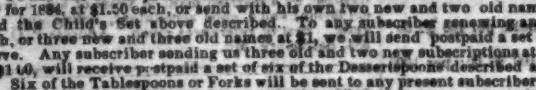
Silver Plated Table Ware.—There is, perhaps, no other one article in the market except jewelry that admits of so much deception as plated ware. The country is at present flooded with the cheapest and most worthless goods, which are offered as fine silver plate. First in quality of these goods is the brass body covered with the thinnest possible coating of silver, which after a few months' wear presents as bad a brass surface as the brass can exhibit. The next grade is also a plating, first of nickel, then of silver, upon brass, but much heavier, and consequently more serviceable, though when it does wear the dull color of the brass body is prominent. Third, we have a moderately thin plating of silver upon a white metal body. Fourth, a thin plating on a steel body. None of the foregoing can be properly classed as standard goods. Next in quality comes a thicker silver plating on a harder, more substantial and better white metal body; then a double thick plating of silver, and finally we have the heaviest triple plating of pure silver. **This last is the only grade which we offer.**

Holmes, Booth & Hayden's Best.—The goods which we offer must not be confounded with the cheap trash which has been so extensively advertised by some other parties. They are made by Messrs. Holmes, Booth & Hayden, who rank second to no other establishment in the world. They manufacture nothing but **Standard Goods**, and their name is stamped upon every article. **For the accommodation of dealers** all manufacturers of standard goods have adopted the same distinguishing stamps for the different grades of plate. All articles of the lowest grade are stamped A1, which would seem to indicate the best plate, while it is really the distinguishing mark for the lowest grade of standard goods. All double plated Tea Spoons, Butter Knives, Child's Knives and Child's Forks are stamped "A1—"; Dessert Spoons "A1—6"; Table Spoons and Table Forks "A1—"; Triple Plated Tea Spoons, Butter Knives, Child's Knives and Child's Forks are stamped "A1—6"; Dessert Spoons, "A1—9"; and Table Spoons and Forks, "A1—12. The figures following the "—" in each indicate the number of ounces of pure silver in the plating of a dozen pieces. We give this bit of information for the benefit of our readers who may wish to know what they are buying. But besides the grade stamp, every article should bear the name of reputable manufacturers, else the grade stamp cannot be relied upon.

Hand Burnished.—Even among standard goods of reputable manufacturers there is an important difference in the finish. In many cases the polishing is done by a rapid machine-buffing process, while every piece bearing Messrs. Holmes, Booth & Hayden's name is thoroughly **Burnished by Hand.** Hence it will be observed that our Table Ware Presents are composed of the best **white metal,** covered with the thickest plating of **Pure Silver,** which is finished by the best process of **Hand Burnishing.** They are also artistic in pattern, exquisitely engraved, and cannot be distinguished from Solid Silver. With careful usage the triple plate will last a lifetime. All Spoons and Forks and all Knives (except the Solid Steel Plated Knives described below) are uniform in pattern and style of finish. The Knife, Fork and Spoon shown above constitute our **Child's Set**—a very appropriate Birthday or Holiday Present.

Prices for Best Triple Plate.—Child's Set of three pieces (Knife, Fork and Spoon), $2, postpaid. Tea Spoons, $6 per dozen; $3 per set of six; or $1.50 for three, postpaid. Dessert Spoons, $10 per dozen; $5 per set of six; or $2.50 for three. Table Forks, $12 per dozen; $6 per set of six; or $3 for three. Butter Knives, $1 each—all postpaid on receipt of the price. Those wishing to secure reliable ware of this kind for Wedding, Birthday or Holiday Presents should order as early as possible.

Solid Steel Plated Knives.—These goods are covered all over with the heaviest plating of pure silver. They are the celebrated Windsor pattern, with Rosbee Rolstered handle. Aside from their beauty and cleanliness, these knives will save their price every year in the labor required to keep the polish on the ordinary steel blades. Price, $2 per dozen; $3.50 per set of six; or $1.75 for three, postpaid. The very best plated ware is always the most economical in the long run.



To any one of our present subscribers who will renew his own subscription and send us *one* new subscriber for 1884, at $1.50 each, or send with his own two new and two old names at $1 each, we will send postpaid the Child's Set above described. To any subscriber renewing and sending two new names at $1.50 each, or three new and three old names at $1, we will send postpaid a set of six of the Teaspoons described above. Any subscriber sending us three old and two new subscriptions at $1.50, or six old and six new ones at $1.40, will receive postpaid a set of six of the Dessertspoons described above.

Six of the Tablespoons or Forks will be sent to any present subscriber who will send us two new names and three old ones at $1.50, for seven old and seven new ones at $1, or a dozen for four old and four new names at $1.50, or twelve new and twelve old names at $1. Six Plated Knives for two old and two new names at $1.50, or four new and four old subscriptions at $1. A Butter Knife to every subscriber who will send us a new subscriber at $1.50.

THE LIBRARY MICROSCOPE.

A "SECOND SIGHT."—As a second sight a good microscope reveals a world of wonders for our investigation and admiration. The power of a microscope is determined or measured by its capacity to increase the size of the image of anything under examination. If the object appears to be twice as long and twice as wide as it really is, the instrument is said to magnify two diameters or four times. For instance, if an object be one inch square, and if the microscope makes it appear to be two inches square, the image is thus made to cover four times the surface of the object itself. When the microscope shows an image ten times as long and broad as the object, its magnifying power is said to be ten diameters or 100 times. When its power is fifty diameters, the image is spread over 2,500 times the surface of the object under examination, etc. The **Library Microscope** which we offer includes several magnifying powers, the greatest of which produces an image about **10,000 times** as large as the object examined.

Value of a Microscope.—But the value or usefulness of a microscope depends quite as much upon other things as upon its magnifying power. For instance, the small globe or round lens may have a very high magnifying power, but the indistinctness and imperfections of the image which it produces renders it practically valueless, and those who have bought the tens of thousands of such microscopes which are annually sold, are simply imposed upon in so far as they are made to believe that they are perfect or really desirable instruments. Two or more oval lenses combined are a very great improvement on the single round lens. But a perfect object can be produced only by what are termed achromatic lenses, which are very much more costly.

A Large "Field."—Another important feature of a good microscope is what is termed a large field. In one case the image may be perfect only at a single point or within comparatively small limits, while that of another instrument will be perfect over a much larger area or field. It is also desirable to have the focal distance of the lens as great as possible. For instance, in one case the object may be in focus at a sixteenth of an inch from the lens, while another microscope of equal power will be in focus at several times the distance from the object. It is also desirable to have a microscope so mounted as to be easily adapted to a wide range of circumstances. All these and many other features enter into and modify the value and usefulness of microscopes.

Indispensable.—The time has come when a good microscope should be regarded as one of the indispensables of every intelligent household, as well as of every public and private school. The instrument we here offer is specially adapted for the use of amateurs, and of beginners in the study of entomology, botany and other kindred branches of science. It is also very useful for the investigation of the adulterations in food, the numerous microscopic enemies of the farm, garden and household, and for all scientific investigations except a few of the more minute observations of specialists. It has the unqualified praise of distinguished scientists who commend it to their students; and yet it is so simple and easily managed by the aid of the instructions accompanying it, that all may readily use it with very great pleasure and profit.

One Dollar a Year pays the interest on an investment which secures it; and surely there is no household, school or individual whom it would not annually benefit to at least that amount. As we have said, it becomes a "second sight," introducing to us the teeming world of microscopic wonders by which we are surrounded.

Camera Lucida.—Accompanying every instrument is what is termed a "camera lucida" attachment which enables even a child to sketch, and preserve in large size, minute objects which are unseen or scarcely visible to the unaided eye. This and other fixtures are packed with the microscope in a handsome walnut case. Price of Microscope, Camera Lucida, and all fixtures, is only $10, by express.

We will give this MICROSCOPE for FOUR OLD and FOUR NEW SUBSCRIPTIONS at $1.50, or TEN OLD and TEN NEW NAMES at $1.

MOST USEFUL BOOK EVER PUBLISHED

LATEST EDITION FROM NEW PLATES.

It is possible for a child to learn to pronounce at sight and to correctly spell a thousand Greek words without associating with one of them the thought which it is designed to embody. He may also memorize the synonyms of these words and still be unable to intelligently express the simplest thought in the symbols which have been studied.

This is much like the usual school process of memorizing abstract words and definitions. Children are compelled to learn to pronounce, spell and define thousands of words which remain almost as unintelligible and useless to them as so many uncomprehended Chinese characters. **No memorized word is useful except in so far as its meaning be clearly understood.** For the meaning of words we must consult a standard dictionary.

In view of the fact that correct spelling and pronunciation and a knowledge of the significance of words in frequent use is the greatest educational accomplishment, the importance of a National Standard Dictionary in every household can scarcely be over estimated We cannot think well, talk fluently or write intelligibly without having acquired such a dictionary knowledge of the language to be employed.

The place for a child to begin this dictionary branch of his education is at **home.** If this fact were duly appreciated, the average intelligence of the nation would be doubled in five years by a revolution of our present deplorable process of memorizing abstract and meaningless words.

When a word that is not understood is first heard or seen in the time to "study it up" by the aid of a reliable dictionary which should be ever at hand. By thus taking one word at a time while it is associated with the object or the thought which it is designed to convey, it may be really learned as well as memorized, almost without effort; while to undertake to memorize a dozen or fifty such words in a lesson at school would result in the accumulation of **useless rubbish** rather than available knowledge. Not only does the accumulation of this useless rubbish destroy the child's ambition to learn and his thirst for knowledge, but it often shatters his constitution.

This is a very grave evil of our present school system, which must be apparent to every intelligent and thoughtful person. But this incalculable evil cannot be remedied while a dictionary of any kind is not to be found in one household in ten the country over. Hence to supply this need in nearly every family, the **New American Dictionary and Compendium of Useful Knowledge** has been prepared for the press at an enormous expense. Every word in common use is correctly spelled, phonetically pronounced and comprehensively defined.

Combined with the dictionary is an exceedingly valuable **Reference Compendium of Useful Knowledge,** embracing 84 different subjects. Thus vast amount of information, which is almost as important as the dictionary itself, can be obtained nowhere else for less than five times the price of the book.

30 OF THE 84 SUBJECTS TREATED IN THE COMPENDIUM.

1.—Autographs of all Presidents of the United States.
2.—An Alphabetical list of Phrases, Words and Quotations, from ancient and modern languages, with their meaning (9 pages).
3—A Complete list of Scripture Proper Names, and **how** to pronounce them, including all names in the Apocrypha (24 pages).
4.—Alphabetical List of American Geographical Names, with their Pronunciation, Derivation, and Meaning.
5.—Popular Names of States and Cities, as "Buckeye State," "Keystone State," "Hoosier State," "Monumental City," etc., and why so called.
6.—How to Pronounce Difficult Words (30 pages).
7.—Many Valuable Suggestions on How to Speak with Elegance and Ease (24 pages).
8.—List of a great number of Slang and Vulgar Words and Phrases to be avoided (24 pages).
9.—The Declaration of Independence, in full.
10.—The 56 Signers of the Declaration of Independence, with their States, Ages, and Time of Death; ALSO a Fac-simile of their Signatures (Autographs).
11.—The Constitution of the United States, in full.
12.—Each year's Prices, for 53 years, of Wheat, Flour, Corn, Cotton, Beef, Hams, Butter, Sugar, Coffee, Bar and Pig Iron and Coal.
13.—Population of the 250 Towns and Cities of the United States having 10,000 inhabitants and upwards, by Official Census of 1880.
14.—Insolvent, Assignment, and Homestead Laws of the different States of the Union.
15.—Rate of Mortality, and the average number of years any one may "expect" to live after any age, from one year old up to the age of 100 years.

16.—Debts, Revenues, Expenditures, Imports and Exports of the various Nations of the World.
17.—The Armies of each Nation of the World, their numbers and Annual Cost.
18.—National Debts, Expenditures and Commerce of Nations—Amount for each inhabitant.
19.—Value, in United States money, of 63 Foreign Gold and Silver Coins in Circulation.
20.—Tables for reckoning interest at 4, 5, 6, 7, 8 and 10 per cent, from one day to one year, from $1 to $1,000.
21.—Weights and Measures of the United States and other countries.
22.—Chronological History of America and of the United States, from 1492 to 1881 (9 pages).
23.—Heads of the Principal Nations of the World, Names of Kings, Queens, etc
24.—Metric System of Weights and Measures in full.
25.—Vocabulary of Business, giving an Interesting and Useful Explanation of 340 Words and Terms used in Business such as "ad valorem," "Broker," "Checks," "Days of Grace," "Drafts," "Ejectments," "Foreclosure," "Guarantee," "Invoice," etc., etc. (8½ pages).
26.—Nautical Vocabulary, explaining over 400 Words and Terms used on Ships, etc. (11 pages)
27.—Christian (or "given") Names of Men and Women, giving their Derivation, **Meaning,** and Pronunciation of over 500 of them.
28.—Ancient Geographical Names of Countries, Cities, etc., etc., and their **present** names.
29.—How to Organize and Conduct Public Meetings. Useful Suggestions.
30.—Convenient Tables for Reckoning Wages.

IT IS WORTH 50 ORDINARY BOOKS

A standard and reliable dictionary such as we offer is worth more to any householder than fifty ordinary books; and the parent who fails to provide such a work for his child is depriving him of a rightful privilege which is absolutely worth a hundred times its cost. There are men, not a few, who would gladly give even a thousand dollars for what would have been learned by the aid of such a book as the New American Dictionary, if it had been supplied to them in early life. Of course it is only by producing it for the million that it is afforded at the nominal price of $1, postpaid; or five copies postpaid for only $4. Ask 4 of your friends to buy one each and thus get your own book free, all postpaid and warranted to give satisfaction.

We will send this Book postpaid to every subscriber who renews and sends us one new name at $1.40, or for two new names and three renewals at $1.

GOSSAMER WATERPROOFS.

GENT'S COAT.

Keep Dry.—It pays in money as well as in health to keep dry in rainy weather. For this purpose Gossamer Rubber Clothing has become a practical necessity. It is light, almost odorless, conveniently carried, and, best of all, a good article can be afforded at low price. At wholesale, Gossamer Coats and Newports range in price from about 80 cents up; but as we offer only such goods as can be fully warranted, we are limited to a high grade which is really very much better worth the price than the cheapest grades are worth what they cost. Hence those wishing to be sure of the better grade should secure those made by the Goodyear Rubber Manufacturing Company, which are warranted. Each garment is inclosed in an enamel cloth bag.

GENTS' GOSSAMER COATS range in sizes as follows: 36, 38, 40, 42, 46, 48 and 50 inches. In ordering give full height and size around the waist just below the arms. $4, postpaid.

LADIES' GOSSAMER NEWPORTS range in length as follows: 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56 58 and 60 inches. In ordering, send measure from neck to bottom of walking dress. Price $4, postpaid.

LADY'S NEWPORT.

We will send, postpaid, one of these Waterproofs for one renewal and two new subscriptions at $1 50, or for four old and four new names at $1.

ZIGZAG JOURNEYS IN EUROPE.

As a juvenile book of travels, probably no work ever written excels the famous "Zigzag Journeys in Europe." In this book we have a trip across the ocean without seasickness, a visit to foreign lands without expense, a look at old ruins and their stories while sitting in one's own home. You are made familiar with the Religion, Habits and Industries of Europe, and you study its Past and Present History in a story as thrilling as the most fascinating novel.

Zigzag Journeys in Europe gives an account of a Teacher and his class of boys who took a steamer in New York for a trip of pleasure and study in England, Scotland, Belgium and France. How they planned for the trip, the description of the steamer, the experience of the seasick boys, the events of the voyage, are all vividly told. As they travel from place to place, the master relates the events of history standing on the very spot where they occurred. As you read the book you seem to be one of the class, and to see the events of the past rather than to read about them. The following are a few of the many stories related: William the Conqueror, Robert of Normandy, Joan of Arc, with several fullpage engravings of scenes in her life; visit to Scotland and story of Highland Mary; the story of the Druids and Romans; the Jolly Harper Man; the Wise Men of Gotham; visit to Shakespeare's Birthplace, Garden and Tomb; visit to Oxford; visit to London, Westminster Abbey, Parliament, the Tower; stories of Charles I., and Cromwell, and Prince Albert and his Queen. Trip to Belgium, story of Waterloo, Charlemagne, Charles the Rash; the story of the Black Prince; story of St. Louis and St. Bartholomew's Eve; visit to Paris, her Gardens, her Churches, her Palaces, illustrated with several full-page engravings. Trip to Britanny, etc., etc. The work is most profusely illustrated with colored maps and fine engravings of the scenes described. Here is a live book that is really wholesome and instructive, as well as in the highest degree ornamental and fascinating; and wise parents will get rid of the corrupting and demoralizing influence of current blood and thunder literature by providing their children with a sufficiency of such works as this.

What if it does cost a few dollars a year. The money could not be more productive and wisely invested. Price, $1.75. An extra book will be given to any person who shall send us $7, for a club of four copies of Zigzags,—all (the five) postpaid to separate addresses.

Sent postpaid for one renewal and one new name at $1.50, or three new and three old names at $1.

HARPER'S PERIODICALS.

Per Year:

HARPER'S MAGAZINE.....$4 00
HARPER'S WEEKLY..... 4 00
HARPER'S BAZAR..... 4 00
HARPER'S YOUNG PEOPLE..... 1 50
HARPER'S FRANKLIN SQUARE LIBRARY,
One Year, (52 Numbers)..... 10 00

Postage Free to all subscribers in the United States or Canada.

The Volumes of the WEEKLY and BAZAR begin with the first numbers for January, the Volumes of the YOUNG PEOPLE with the first Number for November, and the Volumes of the MAGAZINE with the Numbers for June and December of each year.

Subscriptions will be entered with the Number of each Periodical current at the time of receipt of order, except in cases where the subscriber otherwise directs.

Specimen copy of HARPER'S YOUNG PEOPLE sent on receipt of a three cent stamp.

HARPER'S FRANKLIN SQUARE LIBRARY; a weekly publication, containing works of Travel, Biography, History, Fiction, and Poetry, at prices ranging from 10 to 25 cents per number. Full list of *Harper's Franklin Square Library* will be furnished gratuitously on application to HARPER & BROTHERS.

Remittances should be made by Post-Office Money Order or Draft, to avoid risk or loss. Address

HARPER & BROTHERS,
Franklin Square, N. Y.

SEND For description of **ATLANTIC Strawberry**, the most valuable grown; and new Catalogue of BEST SMALL FRUITS. Free. W. P. HASKETT, *Homewood, Del.*

SMALL FRUIT PLANTS VINES, ETC.

At Reasonable Rates.

Jersey Queen, James Vick, Manchester, Bidwell, Finch's Prolific, and most of the old standard varieties of

STRAWBERRIES, RASPBERRIES, GRAPES, &c.

Send for Price List, also my $3.00 offer of assortment of each. Am also breeding a choice lot of P. Rock fowls, trios $5, Eggs $1.50 per 13. Address

R. S. COLE,
Cedar Hill Small Fruit Farm,
HARMANS, A. A. Co., Md.

900,000 Plants, JAMES VICK, D. BOONE, MRS. GARFIELD, Manchester Old Iron Clad and 50 others. HANSELL, best early Raspberry, and other varieties. EARLY HARVEST, E. CLUSTER, WILSON, Jr., and other Blackberries. Trees, Vines, etc., etc. Descriptive Catalogue free.

J. W. HALL, Coulbourn, Md.

We will send you a watch or a chain BY MAIL OR EXPRESS, C. O. D., to be examined before paying any money and if not satisfactory, returned at our expense. We manufacture all our watches and save you 50 per cent. Catalogue of 250 styles free. EVERY WATCH WARRANTED. Address

STANDARD AMERICAN WATCH CO.,
PITTSBURGH, PA.

I HAVE a new and rich work of RARE attraction and value. Over 2000 illustrations, nearly 1200 pages, in a volume never before equalled, for the Farmer, Housekeeper, Stock Raiser or Gardener. Forty Colleges and specialists have contributed to this great work. AGENTS WANTED. I think the endorsements are unparalelled and that its sale offers capable men a chance to make money not equalled elsewhere in the book line to-day. Investigation solicited. A valuable pamphlet free. A confidential proposition to those open for an engagement. Address, W. H. THOMPSON, Pub.,
404 Arch Street, Philadelphia, Pa.

$3 PER TON GYPSUM

THE GREAT FERTILIZER!

CAYUGA LAND PLASTER has an honorable record of ¼ of a century. Contains Phosphate of Lime. Gives the Plant an early start, improves quality and increases yield. $3 per ton. Low freights to all points. Pamphlets and Farmers' Memorandum Book FREE. *Correspondence solicited.* Address CAYUGA PLASTER CO., Union Springs, N.Y.

ANIMAL PORTRAITURE

AND FINE

Landscape Photography

Photographs of Country Residences and Grounds. Interiors, etc., executed in a skillful and artistic manner. Family Groups taken at their homes. Particular attention given to photographing merchandise for drummers' use. Old Daguerreotypes, etc., copied and enlarged to any size.

My Photographs of Live Stock are all made by the New Instantaneous Process. Satisfaction assured. Specimens of my productions can be seen at the office of the AMERICAN FARMER. All letters of inquiry cheerfully answered.

C. O. BROWN,
805 EAST MONUMENT STREET,
BALTIMORE, MD.

FRUIT TREES

CLARMONT AND FURLEY HALL NURSERIES.

Established 1828. 300 Acres in Trees.

Our Fruit and Ornamental Trees are unusually fine this season, including Apples, Peaches, Pears, Cherries, Plums, Damsons, Apricots, Nectarines, etc., Grape Vines, Blackberries, Raspberries Currants, Gooseberries, Strawberries and Asparagus Roots. A very handsome lot of all the varieties of Shade and Ornamental Evergreens, Shrubbery and Osage Orange for hedging.

PEACH TREES.—A very large and handsome stock of the finest well-tested varieties, budded from fruiting trees. The CHAIR'S CHOICE Peach now considered to be the largest and finest of all the late yellow open peaches, fully eight (8) days later than Smock. A lithograph with description and origin of the Chair's Choice sent free on application. To parties planting largely we will deal very liberally. Personal inspection of our nursery desired. Address

WILLIAM CORSE & SONS,
Post Office Box 408. BALTIMORE, MD.

BURNSIDE PARK HERD,

SAM'L M. SHOEMAKER,

BALTIMORE, - MARYLAND.

M. G. ELLZEY, M. D.,

1012 I Street N. W., Washington, D. C.

Breeder of Highly Bred Gentleman's Roadsters and Saddle Horses, Shorthorn Cattle, Southdown Sheep direct from Lord Walsingham's Celebrated Flock, and Purely Bred Berkshire Swine.

Correspondence invited. **PRICES LOW.** Some fine Horses now for sale.

ESTABLISHED] **A. E. WARNER,** [1811.

MANUFACTURER OF

SILVER WARE AND RICH JEWELRY

English, Swiss and American WATCHES of the Best Makers,

Importer and Dealer in Diamonds, Fine Watches, Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS.

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses, Shell Jewelry, &c.

All of which is offered at GREATLY REDUCED PRICES.

No. 135 W. BALTIMORE STREET, near Calvert, Balto.

EASTERN SHORE NURSERIES,

DENTON, CAROLINE CO., MD.

PRICE LIST WILL BE MAILED FREE TO ALL APPLICANTS.

A very fine stock of APPLE TREES, of such kinds as are suited to the soil and climate of Maryland and Virginia. Peach Trees, Pear, Cherry, Apricot, Quince and Nectarine Trees. A large and superior lot of Wild Goose and other Plum Trees. An immense stock of Grape Vines, embracing 40 kinds, at very low prices. Shade and Ornamental Trees. In short, a complete assortment of carefully grown nursery stock, at prices as low as a reliable and good article can be grown.

☞ Send for Price List before purchasing elsewhere.

J. W. KERR, Proprietor.

My Vegetable and Flower Seed Catalogue for 1884, the result of thirty years' experience as a Seed Grower, will be sent free to all who apply. All my Seed is warranted to be fresh and true to name, as for that I build it's prove other lose. Agents to refill wholesale. Reproduction of Vegetable Seed, one of the most extensive in the United States. My American Catalogue is a large part of it of my own growing. As the original introducer of Eclipse Beet, Burbank Potatoes, Marblehead Early Corn, the Hubbard Squash, and scores of other new Vegetables, I invite the patronage of the public. In the gardens and on the farms of those who plant my seed will be found my Seed advertisement.

JAMES J. H. GREGORY, Seed Grower, Marblehead, Mass.

THE BALTIMORE BAPTIST,

H. M. WHARTON, A. C. BARROW, } Editors.

ENLARGED AND IMPROVED.

Published every Thursday by the

BALTIMORE BAPTIST PUBLISHING CO.

128 W. Baltimore St., Baltimore, Md.

$1 per Year.

The cheapest Religious Paper in the World.

A First-Class Advertising Medium.

RATES REASONABLE.

A Religious Family Paper for the People. The Organ of the Baptists of Maryland and District of Columbia, and the Advocate of the Baptist Denomination everywhere.

The very rapid increase of its subscription list indicates that THE BAPTIST is destined in a short time to be as widely circulated as any of our Denominational Papers in the Southern States.

☞ Sample Copies sent on application

GREAT SAVING FOR FARMERS

THE
LIGHTNING HAY KNIFE!

(WEYMOUTH PATENT.)

AWARDED THE GOLD MEDAL
at Melbourne Exhibition, 1880.

Was awarded the first premium at the International Exhibition in Philadelphia in 1876, and accepted by the Judges as

SUPERIOR TO ANY OTHER KNIFE IN USE.

It is the BEST KNIFE in the *world* to cut *hay, feed* from bale, to cut down *weeds* or *stack*, to cut *corn stalks* for feed, to cut *peat*, or for ditching in marshes, and has no equal for cutting ensilage from the silo. TRY IT.

IT WILL PAY YOU,

Manufactured only by

HIRAM HOLT & CO. East Wilton, Me. U. S. A.

For sale by Hardware Merchants & the trade generally

PENNSYLVANIA ROUTE.

FOR SPEED by the Northern Central and Pennsylvania Railroads to the West, Northwest and Southwest to

PITTSBURG, CINCINNATI,
LOUISVILLE, INDIANAPOLIS,
CHICAGO, ST. LOUIS, and
OTHER PROMINENT POINTS.

Baltimore and Potomac, and Alexandria and Fredericksburg Railways on the South to

WASHINGTON, RICHMOND,

and all points in the

ATLANTIC AND GULF STATES.

The Only All Rail Line with no Omnibus Transfer at Washington.

Northern Central, and Philadelphia and Erie Railways on the North to

HARRISBURG, WILLIAMSPORT,
ELMIRA, WATKINS GLENN,
ROCHESTER, ERIE,
BUFFALO, NIAGARA FALLS.

☞ Baggage called for and checked at hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

Through Tickets sold and information given at Company's office,

N. E. Cor. Baltimore and Calvert Sts.,
At Depot N. C. Railway,
At Union Depot, Charles St. Station,
And Pennsylvania Ave. Station.

CHAS. E. PUGH, General Manager. J. E. WOOD, Gen'l Passenger Agt. Penna. & N. C. R. R.

Cut This Out & Return to us with TEN CTS. & you'll get by mail A GOLDEN BOX OF GOODS that will bring you in MORE MONEY, in One Month, than anything else in America. Absolute Certainty. Need no capital. H. Young, 173 Greenwich St., N. York.

CUTTERS!

For Hay, Straw and Fodder,

In Sizes Suited for Hand or Power.

The DOCTOR BAILEY CUTTER combines new features; the knife so acting on the feed as to economize power. Its simplicity renders it easy to manage, and makes it durable. The cut is changed to the different lengths with facility. The feed can be stopped instantly at will, and its capacity is far greater than any other machine using the same power.

Oliver Chilled Plows

run lighter, are more easily adjusted, and do better work than any other plow.

Malta Shovel Plows. Iron Age Cultivators.
Corn Drags. Cahoon Seed Sowers.
Planet Seed Drill and Cultivator.
Hagerstown Grain Drills. Monarch Grain Drills.
Farmer's Friend Grain Drill.
The Sure Horse Rake. The Victor Horse Rake.
The Hagerstown Horse Rake.
Bullard's Hay Tedder. Tuttle's Hay Loader.
American Hay Elevator.
Double Harpoon Hay Fork. Grain Fans.
Philadelphia Lawn Mowers.
Corn Shellers. Cider Mills.
Farmer's Friend Corn Planters.
Keystone Corn Drills. Hay Presses.
Hay, Straw and Fodder Cutters. Butter Workers.

MOSELEY'S

CABINET CREAMERY.

Stoddard Churns. Davis Swing Churns.
Fountain Pump. Cucumber Pumps.
Patent Galvanized Steel Fence Wire, cheap, durable and easily put up.

REPAIRING DONE WITH DISPATCH.

SEND FOR CIRCULARS.

GRIFFITH & TURNER.

DEALERS IN

Agricultural Implements, Fertilizers and Seeds,

41 & 43 NORTH PACA STREET,
BALTIMORE, MD.

PATENTS Hand-Book FREE.
R. S. & A. P. LACEY,
Patent Att'ys, Washington, D. C.

STOVER'S
GEARED CORN AND COB MILL.

The above cut represents the latest improved and most perfect Feed Mill in existence. It grinds successfully all kinds of grain, and produces a good grade of meal for table use. It grinds TWICE AS FAST as the old style mill, on account of its triple gear motion. The inside of the mill turns three times as fast as the outside in an opposite direction, thus grinding faster and more uniform grade of meal. SEND FOR ILLUSTRATED CIRCULAR AND PRICE LIST.

J. C. DURBOROW & CO.,
35 LIGHT STREET, BALTIMORE, MD.

LUMBER.

THOMAS MATTHEWS & SON,

38 N. High St. and Cor. Canton Ave. and Albemarle St., Baltimore.

White Pine and Yellow Pine LUMBER, for Building. Rough and Dressed Lumber.

HARDWOOD FOR WHEELWRIGHTS AND CABINET-MAKERS.
SHINGLES, LATHS, PALES, Etc., AT LOWEST PRICES.

FRANKLIN DAVIS EDW. H. BISSELL.

BALTIMORE NURSERIES.

FRANKLIN DAVIS & CO.

400 Acres in Nursery Stock. 100 Acres in Orchards. 100 Acres in Small Fruits.

We offer to our customers an immense stock of APPLES, PEACHES, CHERRIES, APRICOTS, GRAPES, &c., all the standard sorts. Also the new varieties of FRUITS, ORNAMENTAL TREES, SHRUBS, ROSES, &c. Wholesale and Retail. To dealers we can offer stock on favorable terms, and the best facilities for packing and shipping. Catalogues mailed on application.

FRANKLIN DAVIS & CO.

Office Cor. Baltimore and Paca Sts. (over People's Bank.) BALTIMORE, MD

SAUL'S
NURSERIES,
WASHINGTON, D. C.

THE undersigned offers a fine stock of the following: New Pears, New Peaches, New Cherries, New Grapes, New Strawberries, &c., Fruit Trees of all kinds.

An extensive stock, viz: Plums, Cherries, Apricots, Apples, suitable to the South, &c. Grape Vines, Strawberries, Raspberries, &c., new sorts Evergreens, New Ornamental Trees, New Shrubs, &c., Small sizes, suitable for Nurserymen, as well as large stock in great variety.

DUTCH BULBS—Large importations direct from the leading growers in Holland. First quality Bulbs, Hyacinths, Lilies, Tulips, &c. New and rare Greenhouse Plants, Winter Blooming Plants.

NEW ROSES—Bennett's Hybrid Tea, Queen of Bedders, New French and English Roses, &c.

☞Everything at low rates. Catalogues mailed to applicants.

JOHN SAUL, Washington, D. C.

WINTER SUITS
AND
OVERCOATS.

THE LARGEST AND MOST VARIED IN THE CITY FOR MEN, YOUTHS AND CHILDREN.

STYLES AND PRICES TO SUIT ALL TASTES. ALL GOODS PROPERLY SHRUNK BEFORE BEING MADE UP. CUSTOM DEPARTMENT FULLY STOCKED FROM WHICH TO ORDER. SAMPLES AND PRICES SENT FREE UPON APPLICATION.

NOAH WALKER & CO.

165 and 167 WEST BALTIMORE STREET,
BALTIMORE, MD.

LANDRETHS' CENTENNIAL SEED CATALOGUE
"GARDENERS' COMPANION."

1784 1884

PRICE 10 CENTS. The most complete and brilliantly embellished Seed Catalogue ever published, costing fifteen cents. The article on Market Gardening under Glass is worth twenty times the price. This being OUR ONE HUNDREDTH YEAR, we publish this Ornate Guide for Garden and Farm. To all sending us TEN CENTS in stamps, we mail a copy, and on orders for Seed will give credit for that amount. Address
LANDRETH & SONS, Seed Growers, Lock Box, Phila., Pa.

SEDGWICK STEEL WIRE FENCE.

Is the only general purpose Wire Fence in use, being a Strong Net-Work without Barbs. It will turn dogs, pigs, sheep and poultry, as well as the most vicious stock, without injury to either fence or stock. It is just the fence for farms, gardens, stock ranges and railroads, and very neat for lawns, parks, school lots and cemeteries. Covered with rust-proof paint (or galvanized) it will last a life-time. It is Superior to Boards or Barbed Wire in every respect. We ask for it a fair trial, knowing it will wear itself into favor. The Sedgwick Gates, made of wrought iron pipe and steel wire, defy all competition in neatness, strength and durability. We also make the best and cheapest All Iron Automatic or Self-Opening Gate, also Cheapest and Best set all Iron Fence. Best Wire Stretcher and Post Auger. Also Manufacture Russell's excellent Wind Engines for pumping water, or geared engines for grinding and other light work. For prices and particulars ask hardware dealers, or address, mentioning paper,
SEDGWICK BROS., Mf'rs., Richmond, Indiana.

GRAPE VINES

POCKLINGTON, DUCHESS, LADY WASHINGTON, VERGENNES, MOORE'S EARLY, JEFFERSON, EARLY VICTOR, BRIGHTON, PRENTISS

Also other Small Fruits, and all older varieties Grapes. Extra quality. Warranted true. Cheap by ☞ Low Rates to Dealers. LARGEST STOCK in AMERICA. Prices reduced. Illus. Catalogue free. T. S. HUBBARD, Fredonia, N. Y.

PRATT'S ASTRAL OIL
WILL NOT EXPLODE.
Wholesale and Retail.
LAMPS OF EVERY DESCRIPTION.
For Sale by W. & H. SPILCKER,
Agents for Chas. Pratt & Co., New York. } 163 Baltimore St.

J. M. LAROQUE'S ANTI BILIOUS BITTERS

For Dyspepsia, Nervousness, Bilious Attacks, Headache, Costiveness, and all Diseases of the Liver and Stomach.

ARE DECIDEDLY THE MOST POTENT REMEDY THAT CAN BE USED.

It is not an intoxicating beverage, and certainly would never be used as a pleasant substitute for alcoholic stimulents, but it is truly a valuable Family Medicine, which has been used for many years by large numbers of our citizens with the most unfailing success in all the above complaints. Try it.

25 Cents a Paper, or $1.00 a Bottle.

WM. E. THORNTON, Proprietor.
Baltimore, Maryland.

PENSIONS

for any disability; also to Heirs. Send stamps for *New Laws*. Col. L. BINGHAM, Attorney, Washington, D. C.

1884—SPRING—1884.

TREES

Now is the time to prepare your orders for NEW and RARE Fruit and Ornamental Shrubs, Evergreens, ROSES, VINES, ETC. Besides many desirable Novelties; we offer the largest and most complete general Stock of Fruit and Ornamental Trees in the U. S. Abridged Catalogue mailed free. Address ELLWANGER & BARRY, Mt. Hope Nurseries, Rochester, N. Y.

University of the State of New York.

AMERICAN VETERINARY COLLEGE,

141 West 54th Street, New York City.

The Regular Course of Lectures commences in October each year. Circular and information can be had on application to A. LIAUTARD, M. D. V. S., Dean of the Faculty.

W. H. Martenet, D. V. S.,

GRADUATE OF THE AMERICAN VETERINARY COLLEGE.

OFFICES: Asquith & Monument Sts., 152 Saratoga Streets; Residence, Hoffman St., East of Gay, Baltimore, Md.

Telephone at Residence.

G. W. LEHMANN, Ph. D., *Chemist and Metallurgist, Baltimore Copper Works.*
W. HAGER, *Formerly Chemist of N. C. Fertilizer Central Station*

LEHMANN & HAGER,

CHEMISTS AND ASSAYERS,

57 S. GAY ST., BALTIMORE, MD.

ANALYSES of all descriptions—Manures, Soils, Chemical Fertilizers, Ores of Gold and Silver (by fire process), Copper, Lead, Manganese, etc. Clays, Coal, Limestone and other minerals. Water for steam, manufacturing and household use. Mineral waters and various products of art. Terms moderate.

SIBLEY'S TESTED SEEDS SUCCEED SOUTH,

Being Specially Grown for all Climates, all Soils, all Crops.

They have won their way by merit alone, to thousands of gardens and farms in every State and Territory. Our great trade in the South attests their adaptability for Southern culture. We make a specialty of Southern varieties. Every sack of our seeds is carefully tested for vitality and purity, before being offered for sale. The varieties are tested in our several Trial Grounds, in different parts of the country, for trueness to name and value for the various sections. Our Illustrated Catalogue and Price List of several thousand new and standard tested varieties of vegetable, farm and flower seeds, brings our great seed stores practically to your own door; it is sent free on application. We offer reduced rates to clubs. Send for the catalogue.

Seeds.

HIRAM SIBLEY & CO., ROCHESTER, N.Y., and CHICAGO, ILL.

REID'S CREAMERY
ALWAYS MAKES GOOD BUTTER. SIMPLEST AND BEST.

AGENTS WANTED

BUTTER WORKER

Most Effective and Convenient, also Power Workers, Butter Printers, Shipping Boxes, etc.

DOG POWERS.

Write for Illustrated Catalogues.

A. H. REID,
26 S. 16th Street, Phila. Pa.

Jersey Red Pigs

From largest herd South which took Eight Premiums and **great sweepstakes as finest herd in Virginia** at State Fairs, 1881-'82. This hog is free from disease, a natural grazier, prolific and early to mature, and in the Western markets brings a higher price than any other breed.

T. LOVELOCK, Gordonsville, Va.

OUR

No. 1 Plantation Saw Mill,

$200

(SEND FOR DESCRIPTIVE CIRCULARS.)

SMITH, MYERS & SCHNIER,
323, 325, 327 & 329 W. Front St.,
CINCINNATI, O.

DEDERICK'S HAY & COTTON PRESSES,

are sent anywhere on trial to operate against all other Presses, the customer keeping the one that suits best. No one has ever dared show up any other Press, as Dederick's Press is known to be beyond competition, and will bale with twice the rapidity of any other. The only way inferior machines can be sold is to deceive the inexperienced by ridiculously false statements, and thus sell without sight or seeing, and swindle the purchaser. Working any other Press alongside of Dederick's always sells the purchaser a Dederick Press, and all know it too well to show up. Address for circular and location of Western and Southern storehouses and Agents,

P. K. DEDERICK & CO., Albany, N.Y.

Gold Watch Free.

The publishers of the Capitol City Home Guest, the well-known Illustrated Literary and Family Magazine, make the following liberal Offer for the New Year: The person telling us the largest verse in the Bible, before March 1st, will receive a Solid Gold, Lady's Hunting Cased Swiss Watch, worth $60; If there be more than one correct answer, the second will receive an elegant Stem-winding Gentleman's Watch; the third, a key-winding English Watch. Each person must send 25 cts. with their answer, for which they will receive three months' subscription to the Home Guest, a 16 page Illustrated New Year Book, a Case of 25 articles that the ladies will appreciate, and paper containing names of winners. Address

Mrs. of HOME GUEST, HARTFORD, CONN.

SEEDS Our new catalogue, best published. *Free to all.* 1,500 *varieties,* 200 *illustrations.* You ought to have it. BENSON, MAULE & CO., Phila. Pa

Imperial Wine Vinegar.

NONPAREIL CIDER VINEGAR.

STRICTLY pure and reliable. Many imitations costing 8 cents a gallon, are sold as Cider Vinegar. To guard against deception, observe that packages bear our brands.

Fresh APOLINARIS WATER.

FREDK. M. BOLLMAN, Importer
68 S. GAY STREET.

SALT

Ashton's, Phœnix, Deakin's, Evans', Worthington's full and quarter sacks. Dairy, Rock, Fertilizing Salt, containing 7 per cent. Sulphate Potash. Also,

KAINIT,

OR GERMAN POTASH SALT.

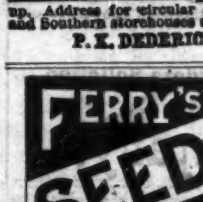
Warranted genuine and Full Standard: also Calcined Kainit, Muriate Potash, Nitrate Soda, &c.

Cargoes constantly arriving and all for sale in lots to suit by

JAS. BONDAY, JR. & CO.

55 SOUTH STREET, Baltimore, Md.

Send for one of our Books on use of Kainit free of cost.



Will be mailed FREE to all applicants and to customers of last year without ordering it. It contains illustrations, prices, descriptions and directions for planting all Vegetable and Flower Seeds, Plants, etc. **Invaluable to all.**

D. M. FERRY & CO. DETROIT, Mich.

BEST MARKET PEAR.

99,999 PEACH TREES All best *varieties* of new and old Strawberries, Currants, Grapes, Raspberries, etc.

EARLY CLUSTER

New Blackberry, early, hardy, good. Single hill yielded 13 quarts at one picking. Send for free Catalogue.

J. S. COLLINS, Moorestown, N. J.

THE DINGEE & CONARD CO'S
BEAUTIFUL EVER-BLOOMING

ROSES

The only establishment making a SPECIAL BUSINESS of ROSES. 60 LARGE HOUSES for ROSES alone. We GIVE AWAY, in Premiums and Extras, more ROSES than most establishments grow. Strong Pot Plants suitable for immediate bloom delivered safely, postpaid, to any post-office. 6 splendid varieties, your choice, all labeled, for $1; 12 for $2; 19 for $3; 26 for $4; 35 for $5; 75 for $10; 100 for $13. Our NEW GUIDE, *a complete Treatise on the Rose,* 70 pp., *elegantly illustrated* FREE.

THE DINGEE & CONARD CO.
Rose Growers, West Grove, Chester Co., Pa.

GEORGE O. STEVENS,

WINDOW SASHES, BLINDS & DOORS

49 LIGHT STREET,

BALTIMORE.

KEEPS IN STOCK AND FURNISHES TO ORDER: Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blinds, Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames Paints, Oil, Putty, Glass, Lumber, Sticks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

The Best Work at Lowest Prices.

BURPEE'S MAMMOTH IRONCLAD WATERMELON

As the introducers of the new celebrated Cuban Queen, we bring before the public for the first time, an entirely distinct and most valuable Watermelon. BURPEE'S MAMMOTH IRONCLAD has such decided points of superiority that it will speedily become a popular favorite with all lovers of fine melons, while for market it is *unequaled.* The shape is the most perfect; skin handsomely striped; flesh beautiful, dainty red, more crystalline than any other melon; most delicious, rich sugary flavor; flesh never mealy, always firm, remarkably solid. Burpee's Mammoth Ironclad grows uniformly to a larger size than any other variety known. Under ordinary cultivation we have had hundreds of melons weighing from 60 to 70 lbs. each, and the entire crop *averaged* 50 lbs. Vigorous growth, matures early, and is the most productive variety known. The melons are truly *Ironclad,* and have even been dropped from the shoulder of a mast without bursting. The hardness or tenacity is in the outside coating or enamelling of the skin. Without exception the best variety for shipping and keeping. 25c. per pkt.; 5 pkts. $1.00.

$100 IN CASH PRIZES FOR 1884

Each purchaser is entitled to compete for one.

BURPEE'S GOLDEN HEART LETTUCE. Entirely new; most attractive, immensely firm heads; delicately curled leaves, most beautiful golden yellow heart, and remains of superb quality for weeks during hottest weather. Packet, 25c.; 5 packets, $1.00.

A REMARKABLE OFFER! On receipt of only 50 Cents in postage stamps, we will send one pkt. each of the two rare novelties above-named, alone worth the price, and also one packet each of Burpee's Netted Gem Musk Melon, sweet as honey, and a rare forage sort; Burpee's Imp. Ed. Turnip Rooted, best; Essex Rescue Cabbage, earliest; Burpee's Surehead Cabbage, all head, and always sure to head; Round Yellow Denvers Onion; New Red Rocca Onion, immense size, mild; Spanish Mammoth Pepper, large, sweet, red; Hollow Crown Parsnip, improved; Perfect Gem Squash, prolific and excellent; Early Long Scarlet Radish; Burpee's Improved Long Orange Carrot, best; Purple Top Munich Turnip, earliest, handsome, and Livingston's New Favorite Tomato. ☞ The above 15 Packets are worth Retail Value, $1.50; but we will send the Entire Collection by Mail, postpaid, to any address for ONLY 50 CENTS, in STAMPS, or 5 collections for $2.

FOR ONE DOLLAR we will send above splendid collection of 15 varieties, and ALSO one packet each of the following: Canadian Wonder Bean, dwarf, delicious flavor as string beans or shelled; Ne Plus Ultra Sweet Corn, *sweetest of all;* Telegraph Peas, immense pods, full of large, luscious peas; Peerless White Spine Cucumber, none better; Imperial Dwarf Large Ribbed Celery, best; Burpee's Superior Large Flat Dutch Cabbage, standard; New No. 3 Cabbage, splendid second early; Vedick's Autumn Giant Cauliflower; Perpetual Lettuce, fine; Large Red Wethersfield Onion; New Giant Yellow Rocca Onion, most striking beauty, enormous size, pleasant flavor; Golden Globe Radish, unsurpassed for summer; Salsify, long white; Spinach, new thick-leaved round, and Burpee's Climax Tomato, justly so celebrated.

☞ The 20 VARIETIES new and choice Seeds, as named above, amount to $2.75 ACTUAL VALUE, but we will mail the entire collection for ONLY ONE DOLLAR. This is certainly the greatest offer ever made by any reliable seedsmen. All full-sized packets, with illustrations and full directions for culture printed on each. We are ORIGINATORS and not imitators of this plan of placing a valuable collection of the best Garden Seeds before the public at less than half usual price. BURPEE'S SEEDS are warranted first-class in every respect, fresh, new crop, and we are determined to prove their superiority to all who will try them.

$1000 IN CASH PRIZES for 1884, to be given to the growers of the best Vegetables and Farm products from Burpee's Seeds. Competition open to all. See our Catalogue for particulars. Show this advertisement to your friends and get them to send with you. 8 complete Dollar Collections (in all 80 packages of Seeds), mailed for $2.50. Entire satisfaction guaranteed.

FLOWER SEEDS BURPEE'S GEM COLLECTION of Asters, Balsams, Pansy, Petunia, Phlox, Verbena, Double Zinnia, in all TEN Packets, most beautiful varieties, with full directions for culture, for only 25c., or 20 packets choicest and most popular varieties, worth $1.35, mailed for 50c. The 10 pkts. Flower Seeds and the 25c. Vegetable collection (in all 30 pkts.), mailed for $1.00.

SPECIAL INDUCEMENT! If you ORDER EARLY we will send *free* a copy of BURPEE'S FARM ANNUAL for 1884 (prize 10 cts.), 120 pages, hundreds of illustrations, with 3 superb Colored Plates—the best and most complete Catalogue of the kind published. BURPEE'S ABRIDGED CATALOGUE, with large illustrated circular of BURPEE'S WELCOME OATS, will be mailed FREE.

W. ATLEE BURPEE & CO. PHILADELPHIA, PA. Warehouses, No. 475 and 477 N. 5th St., & 476 and 478 York Ave.

SIBLEY'S SEEDS

FOR ALL CLIMATES, ALL SOILS, ALL CROPS.

1884 CATALOGUE FREE POST PAID.

SIBLEY'S SEED. HIRAM SIBLEY & CO., Rochester, N.Y. Chicago, Ill.

GEO. F. SLOAN & BROTHER.

LUMBER,

DOORS, SASH, BRICKS, &C.

IN LOTS TO SUIT.

132 LIGHT STREET WHARF,
BALTIMORE.

GILPIN'S VEGETABLE LIVER PILLS

ARE prepared, with great care, from medical plants; are *coated with sugar,* that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver, thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 28, 1880.—*Dr. Gilpin:* After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them, not only to my patients but the entire medical profession. Yours truly, J. M. W. STAR, M.D.

From one of the leading retail druggists of West Virginia:

WESTON, W. VA., June 18, 1880.—*Messrs. Canby, Gilpin & Co.*—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, etc., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit, knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable druggists and country store keepers throughout the United States and Canadas.

Principal Depot, CANBY, GILPIN & CO., Baltimore.

"High Grade" Ammoniated Super-Phosphate.

"Bos" Ammoniated Super-Phosphate.

"GRAIN GENERATOR."

DISSOLVED S. C. PHOSPHATE,

12 to 15 Per Cent. Available Phosphoric Acid.

DISSOLVED ANIMAL BONE.

AGRICULTURAL CHEMICALS.

We have in stock a full line of the above goods

WM. DAVISON & CO. 118 W. LOMBARD STREET, BALTIMORE.

SLINGLUFF & CO.

OFFICE, 157 W. Fayette St. } BALTIMORE. { WORKS, Foot Leadenhall St.

Manufacturers and Manipulators of

PHOSPHATES.

We are now offering to the trade the following *WELL-KNOWN BRANDS OF GOODS*, which we guarantee fully up to the standard:

SLINGLUFF'S DISSOLVED GROUND BONE,
Containing 3 per cent. of Ammonia.

SLINGLUFF'S DISSOLVED SOUTH AMERICAN BONE ASH,
Containing 40 to 44 per cent. Soluble Bone Phosphate.

SLINGLUFF'S DISSOLVED SOUTH CAROLINA PHOSPHATE,
Containing 28 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a High-Grade Fertiliser, we are offering

SLINGLUFF'S NATIVE SUPER-PHOSPHATE,
Prepared entirely from Animal Bone, highly ammoniated. Also,

SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE.

This we can confidently recommend as one of the best fertilizers sold in the market at the price.

WANTED HELP.

Entirely New. PROFITABLE. Outfit Free.

We want an AGENT in every locality. Something entirely new. Our Agents are sweeping the field wherever they go, and making money rapidly. Men, women, boys, girls, all do equally well. Will send you full outfit on receipt of 2 cent Stamp. Don't delay. Address at once, S. S. PUBLISHING CO., Brownwood, Texas.

TRADE-MARKS, PRINTS, LABELS. **PATENTS,** COPY-RIGHTS, DESIGNS Re-Issues.

Brief description of your invention. L. BINGHAM, Patent Lawyer and Solicitor Washington, D. C.

DARNELL'S PATENT FURROWER & MARKER

Cannot be choked. Runs Steadily. Adjustable Runner and Marker. Runs Deep. Gauge adjustable to all inequalities of ground. Opens a better row in either soft or hard ground than any other Marker.

Leaves the earth well pulverized at bottom of furrow. Marks any width from 2½ to 5 feet, and from a mere mark to 6 inches deep.

"Take pleasure in recommending it. It does the business; is well made and will last for years." *J. S. Collins, Moorestown, N. J.*

"It far exceeds my expectations. If the real merits of this theeh implement were known to potato growers alone, the sales would be immense." *E. L. Coy, Pres. Wash. Co. (N. Y.) Agr. Society*

H. W. DOUGHTEN Manufact'r, Moorestown, Burlington Co., N. J.

KNABE PIANOFORTES.

UNEQUALLED IN Tone, Touch, Workmanship and Durability.

WILLIAM KNABE & CO.

Nos. 204 and 206 West Baltimore Street, Baltimore. No. 112 Fifth Avenue, N. Y.

Virginia Lands.

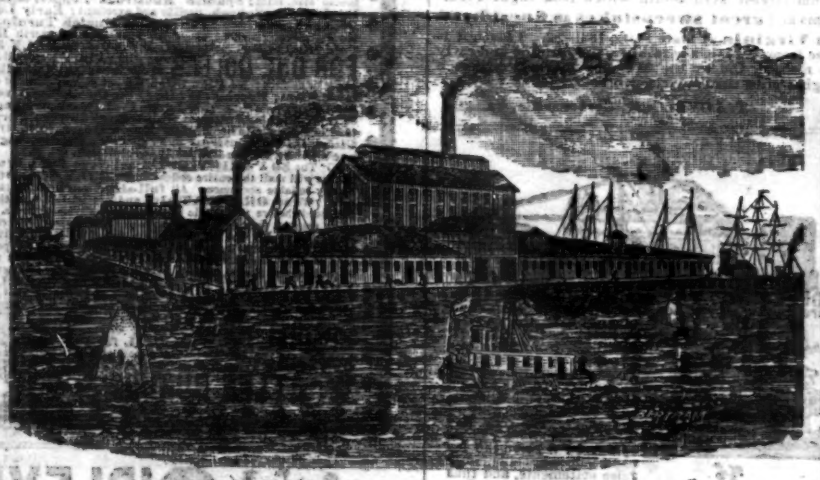
Upper James Real Estate Agency,
By WILLIAM HOLMAN,
CARTERSVILLE, Va.,

WHO offers for sale upwards of 12,000 acres of land lying in one of the most desirable regions of Eastern Virginia. Catalogues sent n application.

The Rasin Fertilizer Company,

PROPRIETORS OF THE

"SEA-WALL GUANO WORKS."



SITUATED ON THE PATAPSCO RIVER, AT SEAWALL, ANNE ARUNDEL CO.

The most extensive and permanent WORKS in the United States, and the whole under the direct supervision of Mr. B. W. L. RASIN, the General Manager of the Company, whose thorough knowledge and experience is a guarantee of the quality of their FERTILIZERS.

Large Stocks on hand and ready for delivery. Your orders Solicited.

The Rasin Fertilizer Company,
20 & 22 South Street, Baltimore.

Peruvian Guano.

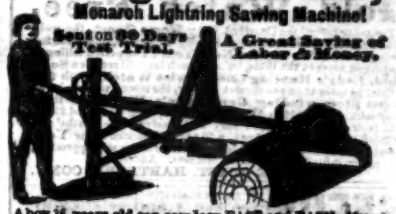
HIGH GRADE PERUVIAN GUANO

Direct from PABELLON DE PICA, the richest deposit of Peru, containing 9½ to 16 per cent. of Ammonia, also a full supply from LOBOS' deposits, containing 5½ to 8 per cent. of Ammonia, which I offer for sale direct from Guano storehouses, Waters' Wharf.

J. Q. A. HOLLOWAY,
107 McElderry's Wharf,
BALTIMORE, MD.

Sawing Made Easy

Monarch Lightning Sawing Machine!



Sent on 30 Days' Test Trial. A Great Saving of Labor & Money.

A boy 16 years old can saw logs FAST and EASY. MILES MURRAY, Portage, Mich., writes: "I am much pleased with the MONARCH LIGHTNING SAWING MACHINE. I sawed off a 36-inch log in 9 minutes." For sawing logs into suitable lengths for family stove-wood, and all sorts of log-cutting, it is peerless and unrivaled. Illustrated Catalogue, Free. AGENTS WANTED. Mention this paper. Address MONARCH MANUFACTURING CO., 168 E. Randolph St., Chicago, Ill.

WM. STUART SYMINGTON. THOS. A. SYMINGTON.

Symington Bros. & Co.,

Office, N.E. Cor. Holliday St. & Exchange Place. Works, Locust Point, Baltimore

Manufacturers of the

ORIOLE FERTILIZERS,

☞ Each grade of these fertilizers is made under a different and distinct formula, and each contains what is most needed by the particular soil for which it is intended. We guarantee our goods exactly as represented.

SYMINGTON BROS. & CO., Manufacturing Chemists.

R. J. BAKER. ESTABLISHED 1827. R. J. HOLLINGSWORTH.

SULPHATE OF AMMONIA. PURE NITRATE SODA.

R. J. BAKER & CO.

MANUFACTURERS AND DEALERS IN

Pure Ground Bone, Chemicals, Acids, &c.,

For Manufacturing Super-Phosphates.

AMMONIATED SUPER-PHOSPHATE FOR ALL CROPS. PURE DISSOLVED RAW BONE. PURE FINE GROUND RAW BONE. STAG SUPER-PHOSPHATE OF LIME FOR TOBACCO.

FACTORY AT LOCUST POINT.

Office, 36 & 38 S. Charles St., Baltimore, Md.

ENTERED AT POSTOFFICE, BALTIMORE, AS SECOND-CLASS MATTER.